INITIAL STUDY
for the
SOUTH 2nd STREET STUDIOS

PDC07-086/PD07-094

CITY OF SAN JOSE

May 2008

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Chapter 1. Background Information

PROJECT DATA

1. **Project Title:** South 2nd Street Studios

2. **Lead Agency Name and Address:** City of San Jose, 200 E. Santa Clara Street, San Jose, CA 95113 Contact: Ella Samonsky (408) 535-7800 Ella.Samonsky@sanjoseca.gov

3. **Project Proponent:** First Community Housing, 75 E. Santa Clara Street, Suite 1250, San Jose, CA 95113 Contact: Geoff Morgan (408) 291-8650

4. **Project Location**: An approximately 1.16 acre site located at the southeast corner of Second Street and Keyes Street in San Jose.

5. **Project Description**: A mixed-use development consisting of 139 affordable housing units and approximately 11,010 square feet of retail space.

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Chapter 2. Project Description

INTRODUCTION

This Initial Study has been prepared pursuant to the requirements of the California Environmental Quality Act (CEQA). The purpose of an Initial Study is to determine whether the proposed project could significantly affect the environment, requiring the preparation and distribution of an Environmental Impact Report. Based on the following analysis, it appears that the environmental impacts of the project would be less-than-significant with proposed mitigation, and the project would be eligible for a Mitigated Negative Declaration.

PROJECT LOCATION

The project is proposed within the corporate limits of San Jose, in central Santa Clara County (refer to Figure 1). The site is located on Assessor's Parcel Numbers (APNs) 477-01-074, -079, -082, and -083 (refer to Figure 2). An aerial photograph of the project site and surrounding area is presented in Figure 3.

The project is proposed on approximately 1.16 acres located at the southeast corner of Second Street and Keyes Street. The north portion of the site currently contains an existing commercial building and parking lot occupied by Pizza Hut. The south and central portions of the site contain a large excavated area where a building was formerly removed and the associated project abandoned.

PROJECT DESCRIPTION

The project proponent, First Community Housing, is applying for a Planned Development (PD) Zoning and Planned Development Permit to allow a mixed-use development of 139 affordable housing units and approximately 11,010 square feet of retail space. The residential component would consist of 132 efficiency units, six one-bedroom units, and one unit for the onsite manager. The project includes one floor of street level retail space with four levels of residential uses above. Parking will be provided at grade for the retail uses, and in an underground garage for the residential tenants. The property currently contains an existing building, parking lot, and other structures that are proposed for removal as part of the project.

The site plan for the project is presented in Figure 4, and site elevations are provided in Figure 5. The proposed complex would be contained in a single five-story building. Total square footage of the building would be approximately 104,000 square feet. Building heights would be a maximum of 60 feet, including roof parapet. A common residential terrace is proposed on the first residential floor facing Second Street. A breakdown of the proposed uses is as follows:

- 132 efficiency units, including 20 units for the developmentally disabled
- Six one-bedroom units
- One two-bedroom manager unit

- Common areas for the residential complex including a community room, computer lab, and gym
- 11,010 square feet of retail space, including small restaurant and retail shop areas
- Underground parking garage and at-grade parking area

Parking and Access. Parking for the retail patrons will be provided in an at-grade parking lot. An underground parking garage will provide parking for the residents and retail employees. The underground garage proposes 88 parking stalls and the at-grade parking area will contain 38 stalls.

Access to residential parking in the underground parking garage will be via a two-way driveway from Third Street. Access to the at-grade parking lot for the retail uses will be via a one-way entrance at Second Street and a one-way exit at Keyes Street.

Landscaping. The project proposes landscaping along much of the east perimeter of the site, within portions of the ground floor parking area, in the ground floor residential courtyard, and on the two living roof sites on the second and fifth floors of the building. Some of the existing street trees along Second and Keyes Streets will be removed and replaced in accordance with the City's requirements, as described below in the **Biological Resources** section.

Lighting. Exterior lighting is proposed for the building and parking areas for security and access. All outdoor lighting would conform to the City's Outdoor Lighting Requirements.

Utilities. The project includes the provision of services and utilities to serve the proposed residential uses, including water, storm drainage, wastewater, and solid waste. A storm water control plan is proposed that includes vegetated bioswales and a landscaped green roof to treat and manage runoff prior to discharge to the City's storm drainage system.

Demolition. Development of the site would require the demolition and removal of the existing building and pavement. A demolition plan would be implemented during construction, including a program to safely remove any hazardous materials and salvage/recycle waste during demolition activities.

Grading. Development of the project would require the excavation of up to 10,000 cubic yards of material to construct the underground garage. Approximately 5,000 to 10,000 cubic yards of this material would be exported from the site and deposited at a City-approved location.

Public Improvements. The project includes improvements to the public sidewalks fronting the property.

PROJECT SCHEDULE

The applicant is planning to begin construction in Fall of 2008. Construction will take approximately 18 months to complete, with occupancy planned for 2010.

PROJECT OBJECTIVES

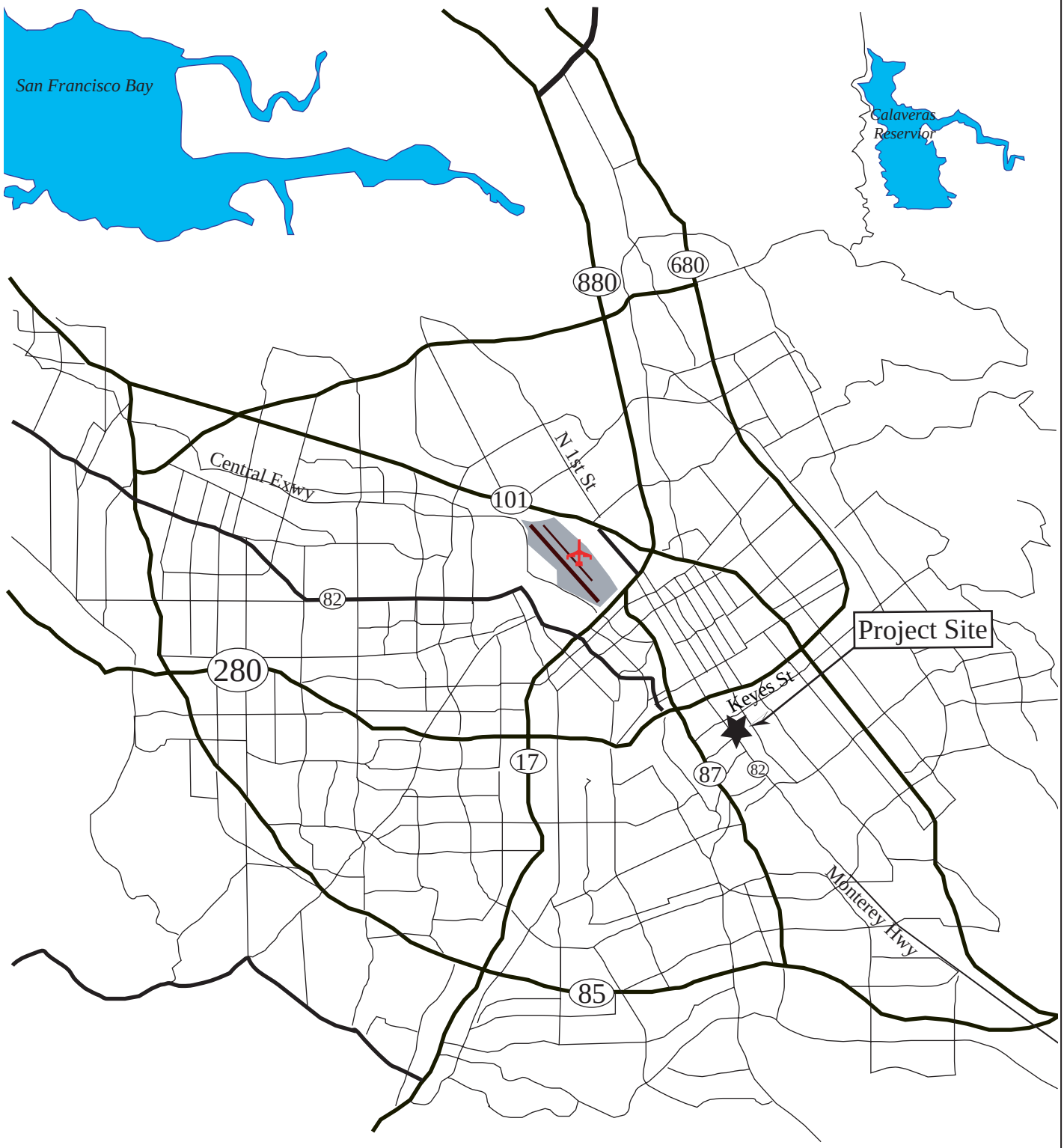
The primary project objectives are as follows:

- Provide affordable rental housing in San Jose to meet the housing demands of low-income persons (earning 60% or less of the area's median income),
- Reserve 20 affordable units for developmentally disabled persons,
- Create retail space to meet the local demand for goods and services in the central San Jose area, and
- Incorporate environmentally sustainable features including a green roof and other architectural features, placing housing near public transit, and providing residents of the development with free annual Ecopasses for Santa Clara Valley Transit Authority services.

PROJECT APPROVALS

The project will require the following approvals:

- City of San Jose – Environmental Clearance
- City of San Jose – Planned Development Zoning, Planned Development Permit, Grading Permit, Building Permit, Tentative Map



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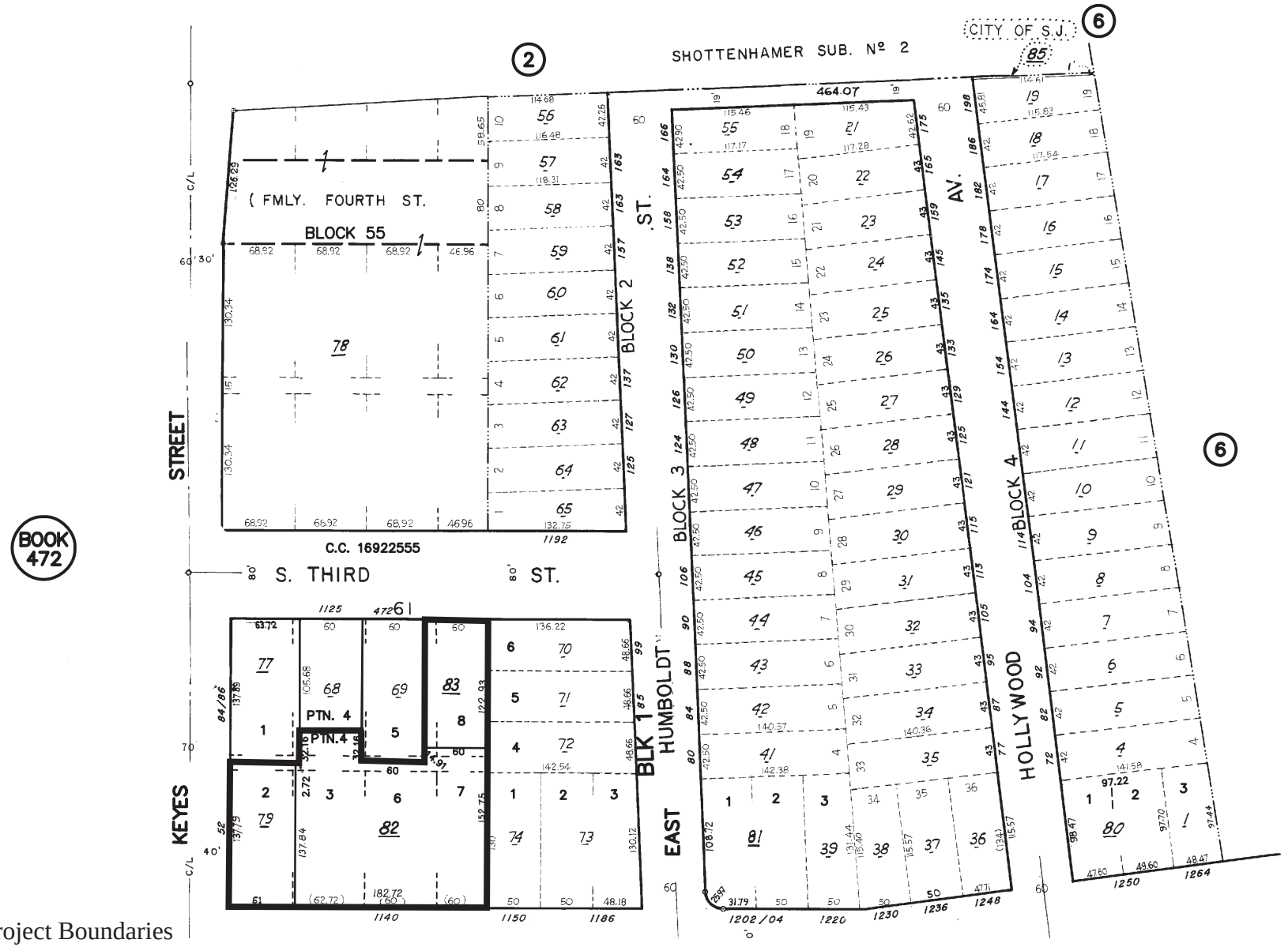
Regional Map

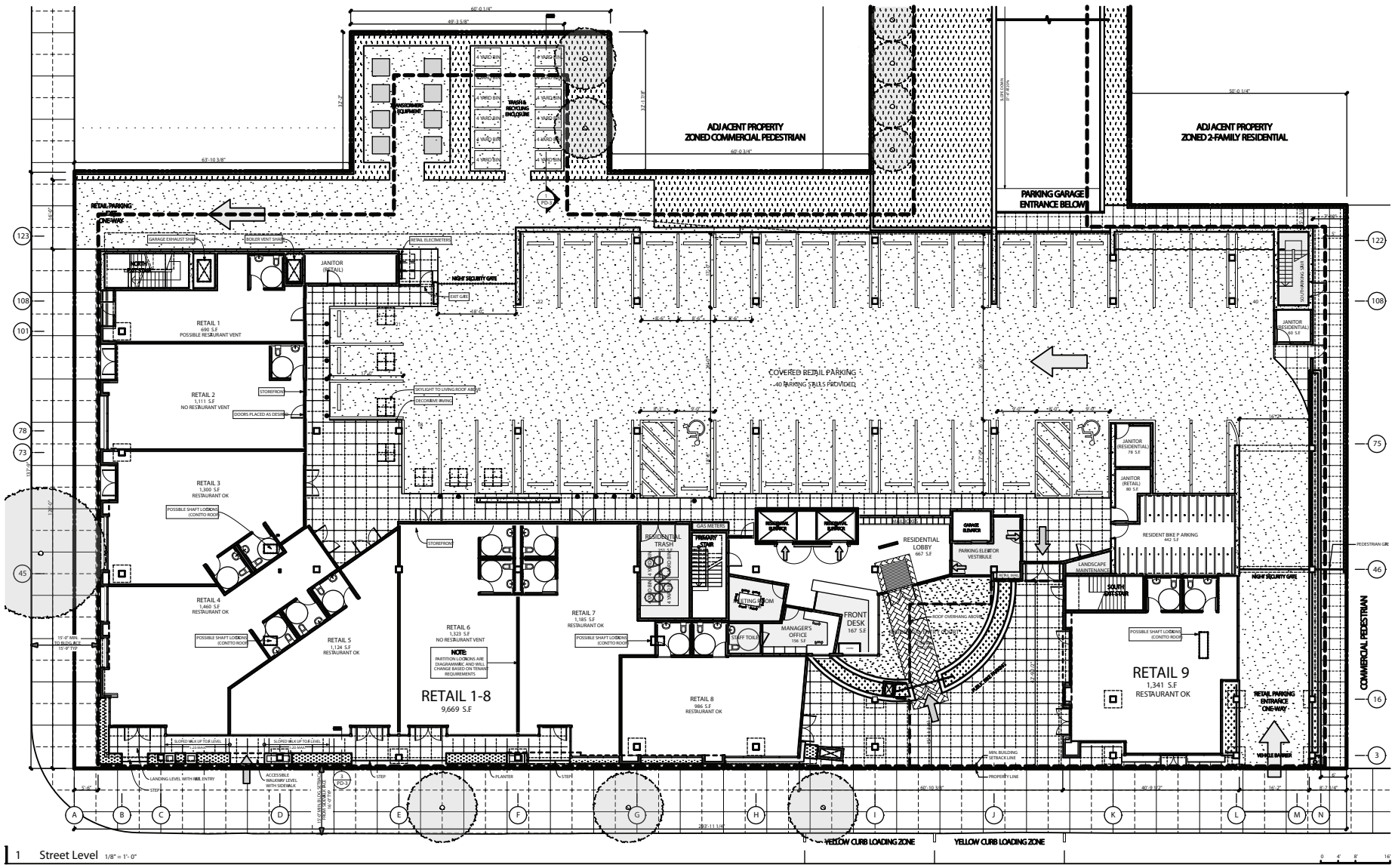
Figure 1



APN Map

Figure 2

N	Aerial Map	Figure 3



Source: Rob Wellington Quigley FAIA, 2008

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Site Plan

Figure 4

Source: Rob Wellington Quigley FAIA, 2007

Elevations

Figure 5A

East Elevation

South Elevation

Source: Rob Wellington Quigley FAIA, 2007

	Elevations	Figure 5B

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Chapter 3. Environmental Setting, Impacts and Mitigation

INTRODUCTION

The following section describes the environmental setting and identifies the environmental impacts anticipated from implementation of the proposed project. The criteria provided in the CEQA environmental checklist was used to identify potentially significant environmental impacts associated with the project. Mitigation is presented for significant impacts. Sources used for the environmental analysis are cited in the checklist and provided in Chapter 4 of this Initial Study.

A. AESTHETICS

Setting

The project site is located within an urbanized area of San Jose. The north side of the property is currently occupied by a Pizza Hut business in a single building with associated parking. The south portion of the site shows evidence of previous excavation conducted for a previous project. The site is bordered by Keyes Street to the north, commercial uses to the northeast, residential to the east, retail to the south, and Second Street to the west.

Photographs of the property are presented in Figure 6, and an aerial of the project area is provided in Figure 3. As shown in the photos, the site contains buildings, pavement, and a previously excavated area. The site does not contain any trees or other notable natural scenic features. The commercial portion of the property is somewhat blighted by an older building.

Impacts and Mitigation

Thresholds per CEQA Checklist

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
1. AESTHETICS. Would the project:					
a) Have a substantial adverse effect on a scenic vista?				X	1, 2, 3
b) Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?				X	1, 2, 3
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			X		1, 2
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?			X		1, 2
e) Increase the amount of shade in public or private open space on adjacent sites?				X	1, 2

Photo 1.View of site looking south, showing existing excavated area.

Photo 2.View of site looking north.

Photo 3.View of site from Second Street looking northwest.

Photo 4.View of site looking west, showing existing commercial structure and parking lot.

	Site Photos	Figure 6

Discussion

Visual Resources

The project site is located in central San Jose and is not within any City or state-designated scenic routes. The project would not impact any scenic vistas or scenic resources.

The proposed project would alter the existing visual character of the site and its surroundings by removing the existing buildings and constructing a new five-story building. The square footage of the proposed building would be approximately 104,000 square feet. Landscaping is proposed along the east perimeter of the site, as well as within various common areas of the development.

Elevations of the project are presented in Figure 5. The proposed building is of a typical urban design, with straight lines and a flat roof. Building materials would include wood, stucco, metal and glass. Balconies are provided for the one-bedroom and two-bedroom units. The maximum building height (including rooftop parapet) is proposed at 60 feet.

The project would increase the intensity of development on the site, which is surrounded mostly with one and two-story commercial and residential structures. However, the project is not expected to significantly degrade the existing visual character of the site, because it would be required to undergo design review to ensure that its scale and mass are compatible with development in the area. The project could improve the aesthetic quality of the site by replacing the older commercial building and excavation pit with a new mixed-use development.

Lighting and Glare

Exterior lighting is proposed for security and access. Outdoor lighting would utilize low-pressure sodium fixtures and wall-mounted luminaries that are fully shielded, in accordance with the City's requirements. The project does not propose any major sources of glare. The project would not result in significant lighting/glare impacts.

Standard Measures

- Design of the project shall conform to the City's *Residential Design Guidelines* and *Commercial Design Guidelines.*
- Lighting on the site shall conform to the City's Outdoor Lighting Policy (4-3).

B. AGRICULTURAL RESOURCES

Setting

In California, agricultural land is given consideration under CEQA. According to Public Resources Code §21060.1, "agricultural land" is identified as prime farmland, farmland of statewide importance, or unique farmland, as defined by the U.S. Department of Agriculture land inventory and monitoring criteria, as modified for California. CEQA also requires consideration

of impacts on lands that are under Williamson Act contracts. The project area is identified as "urban/built-up land" on the Santa Clara County Important Farmlands Map (2006).

Impacts and Mitigation

Thresholds per CEQA Checklist

ENVIRONMENTAL IMPACTS		Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
2.	AGRICULTURE RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:					
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X	4
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X	2
c)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?				X	1

Discussion

The project is located on property identified as urban/built-up land on the Important Farmlands Map and is not located adjacent to any agricultural land. In addition, the site is not under Williamson Act contract and does not involve any agricultural uses. Development of the proposed residential building, therefore, would not impact agricultural land or resources.

C. AIR QUALITY

Setting

The project is located within the San Francisco Bay Area Air Basin. The Bay Area Air Quality Management District (BAAQMD) is the local agency authorized to regulate stationary air quality sources in the Bay Area. The BAAQMD develops and enforces air quality regulations for non-vehicular sources, issues permits, participates in air quality planning, and operates a regional air quality monitoring network. The Federal Clean Air Act and the California Clean Air Act mandate the control and reduction of specific air pollutants. Under these Acts, the U.S. Environmental Protection Agency and the California Air Resources Board (CARB) have established ambient air quality standards for certain "criteria" pollutants, designed to protect public health and welfare. Primary criteria pollutants include carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_X), particulate matter (PM_{10}), sulfur dioxide (SO_2), and lead (Pb). Secondary criteria pollutants include ozone (O_3), and fine particulate matter.

The Federal Clean Air Act and the California Clean Air Act require that the state air resources board designate portions of the state where the federal or state ambient air quality standards are not met as "nonattainment areas," based on air quality monitoring data. Due to differences between the national and state standards, the designation of nonattainment areas varies under federal and state legislation. The Bay Area Air Basin is currently classified as a non-attainment area for the state ozone standard. For particulate matter less than 10 micrometers in diameter (PM_{10}), the Bay Area Air Basin is currently designated as a non-attainment area for the state standard. Further, the Basin is designated as unclassified for particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), pending additional monitoring data. All other pollutants are designated as attainment or unclassified for federal standards and as attainment for the state standard.

The BAAQMD defines sensitive receptors as facilities where sensitive population groups are likely to be located. These land uses include residences, schools, childcare centers, convalescent homes, and medical facilities. Sensitive receptors in the project area consist of adjacent residential uses (single family homes) located just southeast of the site (refer to Figure 4). The nearest home is located directly adjacent to the project site's southeast corner.

Impacts and Mitigation

Thresholds per CEQA Checklist

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:					
a) Conflict with or obstruct implementation of the applicable air quality plan?				X	1, 5
b) Violate any air quality standard or contribute to an existing or projected air quality violation?			X		1, 5
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?			X		1, 5
d) Expose sensitive receptors to substantial pollutant concentrations?				X	1, 5
e) Create objectionable odors affecting a substantial number of people?				X	1, 5

Discussion

The project area is governed by the BAAQMD. The most recent update to the BAAQMD CEQA Air Quality Guidelines was prepared to guide assessment of air quality impacts of a project. Together with the Air Quality Management Plan, it provides guidelines to determine compliance with state and federal air quality standards and requirements for CEQA analysis (*BAAQMD CEQA Guidelines*, 1999).

Operational Impacts

The project would not result in long-term air quality impacts since the only source of air pollution would be the generation of 1,318 daily vehicle trips (Hexagon Transportation Consultants, 2007). Based on the BAAQMD thresholds of significance, projects that generate fewer than 2,000 vehicle trips per day are not considered major air pollutant contributors and do not require a technical air quality study.

Construction Impacts

The project would generate temporary air pollutant emissions during construction activities. The short-term air quality impacts during construction would be associated primarily with an increase in suspended particulates (dust). Construction activities, including site clearing and soil disturbance, could generate dust emissions and locally elevated levels of particulates (i.e., PM_{10}) downwind of construction activities. This increase in dust could result in potentially significant short-term impacts on nearby residential uses. The BAAQMD provides feasible control measures for construction emissions of PM_{10}. The potentially significant air quality impacts would be reduced to a less-than-significant level with the mitigation presented below.

This project would use typical construction equipment such as trucks and bulldozers. This type of equipment can generate temporary emissions of ozone precursors (i.e., nitrogen oxides and volatile organic compounds). These emissions are accommodated in the emission inventory of the state and federally required air plans and would not have a significant impact on the attainment and maintenance of ozone standards. In addition, toxic air contaminants (TACs), such as diesel exhaust, are emitted from various construction vehicles and equipment. The project would require limited construction activities and would not emit substantial TACs.

Standard Measures

- Water all active construction areas at least twice daily and more often during windy periods to prevent visible dust from leaving the site; active areas adjacent to windy periods; active areas adjacent to existing land uses shall be kept damp at all times, or shall be treated with non-toxic stabilizers or dust palliatives.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard.
- Install wheel washers for all existing trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.
- Pave, apply water at least three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas.
- Sweep daily (or more often if necessary) to prevent visible dust from leaving the site (preferably with water sweepers) all paved access roads, parking areas, and staging areas at construction sites; water sweepers shall vacuum up excess water to avoid runoff-related impacts to water quality.
- Sweep streets daily, or more often if necessary (preferably with water sweepers) if visible soil material is carried onto adjacent public streets.

D. BIOLOGICAL RESOURCES

Setting

The project site is located within an urbanized area of San Jose. The existing property contains one building, paved parking, and a previously excavated area. Vegetation on the site is limited to ruderal (weedy) vegetation.

There are no trees within the project site boundaries. Several street trees are located adjacent to the site. The City of San Jose's Tree Removal Controls (San Jose City Code, Sections 13.31.010 to 13.32.100) serve to protect all trees having a trunk measuring 56 inches or more in circumference (i.e., 18 inches in diameter) at the height of 24 inches above natural grade. This ordinance applies to native and non-native species. A survey of street trees adjacent to the site was conducted and the results are presented in Table 1. A total of six trees are located adjacent to the project site (refer to Appendix E). None of these trees are ordinance size.

Any tree found by the City Council to have special significance can be designated as a heritage tree, regardless of tree species or size, and it is unlawful to vandalize, mutilate, remove, or destroy a heritage tree. There are no City-designated heritage trees in the project area, as per the City's heritage tree list (City of San Jose, 2004).

Table 1
Tree Summary

No.	Scientific Name	Common Name	Size (circumference/ diameter)	Condition
1	*Pyrus calleryana*	Ornamental Pear	9"/3"	4
2	*Quercus ilex*	Holly Oak	50"/16"	4
3	*Magnolia grandiflora*	Southern Magnolia	28"/9"	4
4	*Magnolia grandiflora*	Southern Magnolia	31"/10"	3
5	*Magnolia grandiflora*	Southern Magnolia	9"/28"	3
6	*Juniperus sp.*	Juniper	25"/8"	2

Circumference/diameter measured at two feet above existing grade.
Numbers correspond to tree locations provided in Appendix E.
Condition is judged on a scale of 1 to 5 with 1 representing very poor and 5 representing excellent.
Source: Cottong & Taniguchi Landscape Architects (March 2008).

The project site may provide habitat for wildlife species associated with urban areas. Vegetation in urban areas provides food and cover for wildlife adapted to this environment, including birds such as house finch, mourning dove, house sparrow, and Brewer's blackbird. Urban landscape areas may also provide habitat for small mammals such as mice. The project site is completely fenced, and has a low value for wildlife, due to the highly disturbed nature of the property and very limited habitat.

Impacts and Mitigation

Thresholds per CEQA Checklist

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
4. BIOLOGICAL RESOURCES. Would the project:					
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				X	1, 2
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				X	1, 2
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X	1, 2
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				X	1, 2
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X		2, 3
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?				X	2

Discussion

The habitat value on the project site is low due to the highly disturbed nature of the property, which is surrounded by existing urban development. Due to the low habitat value of the site, project development would not result in any impacts to wildlife species or habitat.

The project proposes to remove five of the six existing street trees adjacent to the project site (#2 - #6 in Table 1). The City requires replacement of all removed trees in accordance with established tree replacement ratios, listed below. Impacts could occur to the ornamental pear tree to be retained during construction. Potential impacts to trees would be reduced to a less-than-significant level with implementation of the following standard measures.

Standard Measures

- All trees that are to be removed from the site shall be replaced at the following ratios, as per the City's requirements.

Diameter of Tree to be Removed	Type of Tree to be Removed	Minimum Size of Each Replacement Tree
	Non-Native	
18 inches or greater	4:1	24-inch box
12-17 inches	2:1	24-inch box
Less than 12 inches	1:1	15-gallon container
x:x = tree replacement to tree loss ratio Note: Trees greater than 18" in diameter shall not be removed unless a tree removal permit, or equivalent, has been approved for the removal of such trees.		

In the event the project site does not have sufficient area to accommodate the required tree mitigation, one or more of the following measures will be implemented, to the satisfaction of the City's Environmental Principal Planner, at the development permit stage:

- The size of a 15-gallon replacement tree can be increased to 24-inch box and count as two replacement trees.
- An alternative site(s) will be identified for additional tree planting. Alternative sites may include local parks or schools or installation of trees on adjacent properties for screening purposes to the satisfaction of the Director of the Department of Planning, Building, and Code Enforcement. Contact Todd Capurso, PRNS Landscape Maintenance Manager, at 277-2733 or todd.capurso@sanjoseca.gov for specific park locations in need of trees.
- A donation of $300 per mitigation tree to Our City Forest for in-lieu off-site tree planting in the community. These funds will be used for tree planting and maintenance of planted trees for approximately three years. Contact Rhonda Berry, Our City Forest, at (408) 998-7337 x106 to make a donation. A donation receipt for off-site tree planting shall be provided to the Planning Project Manager prior to issuance of a development permit.

- The following tree protection measures will be included in the project in order to protect trees to be retained:

Pre-construction

1. The applicant shall retain a consulting arborist. The construction superintendent shall meet with the consulting arborist before beginning work to discuss work procedures and tree protection. The arborist shall submit a Tree Preservation Report.
2. Fence all trees to be retained to completely enclose the TREE PROTECTION ZONE prior to demolition, grubbing or grading. Fences shall be 6 foot chain link or equivalent as approved by consulting arborist. Fences are to remain until all grading and construction is completed.
3. Prune trees to be preserved to clean the crown and to provide clearance. All pruning shall be completed or supervised by a Certified Arborist and adhere to the Best Management Practices for Pruning of the International Society of Arboriculture.

During Construction

1. No grading, construction, demolition or other work shall occur within the TREE PROTECTION ZONE. Any modifications must be approved and monitored by the consulting arborist.

2. Any root pruning required for construction purposes shall receive the prior approval of, and be supervised by, the consulting arborist.
3. Supplemental irrigation shall be applied as determined by the consulting arborist.
4. If injury should occur to any tree during construction, it shall be evaluated as soon as possible by the consulting arborist so that appropriate treatments can be applied.
5. No excess soil, chemicals, debris, equipment or other materials shall be dumped or stored within the TREE PROTECTION ZONE.
6. Any additional tree pruning needed for clearance during construction must be performed or supervised by an Arborist and not by construction personnel.
7. As trees withdraw water from the soil, expansive soils may shrink within the root area. Therefore, foundations, footings and pavements on expansive soils near trees shall be designed to withstand differential displacement.

E. CULTURAL RESOURCES

Setting

The project site was either undeveloped or used for agricultural purposes from about 1890 to 1950. From 1950 to approximately 2000, the site was in various commercial and residential uses. A motel was recently removed from the property, resulting in excavation of the southern portion of the site.[1]

The project is located in an urbanized area and has been extensively disturbed by grading and development. The subject site is not identified as archeologically sensitive according to the City's GIS database.

Impacts and Mitigation

Thresholds per CEQA Checklist

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
5. CULTURAL RESOURCES. Would the project:					
a) Cause a substantial adverse change in the significance of a historical resource as defined in CEQA 15064.5?				X	1, 2
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA 15064.5?			X		1, 2
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X	1, 2
d) Disturb any human remains, including those interred outside of formal cemeteries?			X		1, 2

[1] A permit was obtained from the City for these activities (Building Permit for Demolition #0068765, issued 9/13/2000).

Discussion

The project site does not contain any structures over 50 years old. The existing commercial building was constructed around 1966. Given the site's previously developed nature, the likelihood that archaeological materials exist on the property is low. However, construction of the project could potentially uncover buried archaeological resources during excavation activities. Implementation of the following standard measures would avoid impacts to cultural resources.

Standard Measures

- The applicant shall retain a qualified archeologist to monitor the site during construction.

- Should evidence of prehistoric cultural resources be discovered during construction, work within 50 feet of the find shall be stopped to allow adequate time for evaluation and mitigation by a qualified professional archaeologist. If evidence of any archaeological, cultural, and/or historical deposits is found, hand excavation and/or mechanical excavation shall proceed to evaluate the deposits for determination of significance as defined by CEQA guidelines. The archaeologist shall submit reports, to the satisfaction of the City's Environmental Principal Planner, describing the testing program and subsequent results. These reports shall identify any program mitigation that the developer shall complete in order to mitigate archaeological impacts (including resource recovery and/or avoidance testing and analysis, removal, reburial, and duration of archaeological resources.)

- As required by County ordinance, this project shall incorporate the following guidelines. Pursuant to Section 7050.5 of the Health and Safety Code, and Section 5097.94 of the Public Resources Code of the State of California in the event of the discovery of human remains during construction, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains. The Santa Clara County Coroner shall be notified and shall make a determination as to whether the remains are Native American. If the Coroner determines that the remains are not subject to his authority, he shall notify the Native American Heritage Commission who shall attempt to identify descendants of the deceased Native American. If no satisfactory agreement can be reached as to the disposition of the remains pursuant to this State law, then the land owner shall re-inter the human remains and items associated with Native American burials on the property in a location not subject to further subsurface disturbance.

F. GEOLOGY AND SOILS

Setting

A geotechnical investigation was performed for the project site by TRC and is contained in Appendix A (October 2007). The scope of this investigation included 1) three borings and four cone penetration tests, 2) evaluation of the physical and engineering properties of the subsurface soils, and 3) engineering analysis and recommendations for site earthwork, building foundations, slabs-on-grade, and basement walls.

The project is located at an elevation of approximately 104 feet above mean sea level. The project site is vacant with the exception of a Pizza Hut restaurant and parking lot located on the north side of the site. A portion of the property has been excavated to a depth of approximately four to eight feet, and contains several concrete piles. In addition, a soil stockpile is located on the site adjacent to the excavation.

Based on the results of the geotechnical investigation, soils on the project site consist of stiff to very stiff clay to depths of about 8½ to 12½ feet below ground surface. Below the clay layer, soils consist of loose to medium dense silty and clayey sands with occasional lenses of medium stiff clay. Below the sand layer, medium stiff to stiff clays were found to the maximum depth explored of 50 feet. A plasticity index (PI) test was performed on the clayey soil sample, which indicated that the near surface clayey soils have a low plasticity and expansion potential.

Free groundwater was encountered at depths between five to 13½ feet. According to California Geological Survey maps (2002), historically high groundwater levels in the project area are approximately eight feet below ground surface.

The project site is located within the seismically active San Francisco Bay Area. Significant earthquakes that occur in the Bay Area are generally associated with the San Andreas Fault system, located about 11 miles west of the site. Other active faults in the area are the Silver Creek Fault, adjacent to the project site; the Hayward Fault, located about six miles northeast of the site; and the Calaveras Fault, located about ten miles east of the site.

The project is not located on any faults; therefore the potential for fault rupture on the site is low. In addition, the project is not mapped within an Alquist-Priolo Earthquake Fault Zone. However, the site is located within the State of California Seismic Hazard Zone for Liquefaction, Zone of Required Investigation (CGS, 2002). The geotechnical analysis evaluated the potential for liquefiable soils on the site. The results indicate that several sand layers on the site can theoretically liquefy. This could result in about ¾ to one inch of total settlement. Differential movement for level, ground deep soil would be on the order of ½ inch or less.

Impacts and Mitigation

Thresholds per CEQA Checklist

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
6. GEOLOGY AND SOILS. Would the project:					
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:					
i) Rupture of a know earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?				X	1, 2, 6

ENVIRONMENTAL IMPACTS		Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
ii)	Strong seismic ground shaking?			X		1, 2, 6
iii)	Seismic-related ground failure, including liquefaction?			X		1, 2, 6
iv)	Landslides?				X	1, 2, 6
b)	Result in substantial soil erosion or the loss of topsoil?				X	1, 2, 6
c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X		1, 2, 6
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			X		1, 2, 6
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X	1, 2, 6

Discussion

The project would require approximately 5,000 to 10,000 cubic yards of excavation for the underground garage. This material would be exported from the site and deposited at a City-approved location.

From a geotechnical perspective, the project property is suitable for the proposed development as planned, provided design and construction are performed in accordance with the recommendations presented in the TRC geotechnical report. The primary geotechnical concerns identified on the project site are as follows:

- Liquefiable soils immediately below the proposed foundation
- Excavation for the underground garage near adjacent buildings and streets
- Shallow ground water
- Presence of existing concrete piles

As described earlier, liquefiable soil is present below most of the proposed foundation area, which could result in foundation failure during a strong earthquake. In addition, liquefaction-inducted settlement of up to one inch could occur on the site, damaging proposed structures.

The proposed underground garage is located near existing adjacent buildings and streets, which could undermine these structures if constructed inappropriately. In addition, high groundwater is identified in the project area below the proposed elevation of the underground parking garage. The existing geotechnical conditions on the site represent significant hazards that could impact proposed development.

Due to its location near several major faults (see discussion above), the project would be subject to moderate to strong ground shaking from earthquakes on any of the nearby active fault systems during the design life of the development. The proposed structures would be designed and constructed in conformance with the Uniform Building Code Guidelines for Seismic Zone 4 to

avoid or reduce potential damage from seismic activity. Conformance with standard Uniform Building Code Guidelines would minimize potential impacts from seismic shaking on the site.

The project would be subject to potential geotechnical impacts that would be avoided with implementation of the following standard measures.

Standard Measures

- The proposed structures on the site would be designed and constructed in conformance with the Uniform Building Code Guidelines for Seismic Zone 4 to avoid or minimize potential damage from seismic shaking on the site.

- A soil investigation report addressing the potential liquefaction hazards on the site shall be submitted to, reviewed, and approved by the City Geologist prior to issuance of a grading permit or Public Works Clearance. The investigation should be consistent with the guidelines published by the State of California (CDMG Special Publication 117) and the Southern California Earthquake Center (SCEC report).

G. HAZARDS AND HAZARDOUS MATERIALS

Setting

A Phase I Environmental Assessment was prepared for the project site by WEST Environmental Services & Technology to determine the potential for hazardous materials contamination on the property (November 2007). This report is contained in Appendix B. The Phase I Assessment included the following: 1) review of local agency files, 2) examination of historic aerials and maps of the area, 3) a regulatory database search, 4) survey of the site and immediate project area, and 5) Phase II soil, soil gas, and groundwater sampling and analysis.

The project site is vacant with the exception of a Pizza Hut restaurant and parking lot located on the north side of the site. A portion of the property has been excavated to a depth of approximately four to eight feet. A soil stockpile is located adjacent to the excavation. In addition, dewatering wells appear to have been installed around the perimeter of the excavation.

Between 1915 and the 1940s, the site was developed with residential uses. Between the 1940s and the 1960s, a gas station operated at the location of the current Pizza Hut. From the 1960s until 2001, the Park View Motel operated on the central and southern portions of the site. The motel was demolished in 2001.

A site inspection was conducted for the project site by WEST on September 7, 2007. Inspection of the site identified existing retail uses and excavation/soil stockpiling on the property. The inspection did not readily identify the use or presence of hazardous substances on the property.

A database search was conducted to identify recorded hazardous materials incidents in the project area. This review included federal, state, and/or local lists of known or suspected contamination sites; known generators/handlers of hazardous waste; known waste treatment, storage, and disposal facilities; and permitted underground storage tank sites. The results of the

database search and local agency file review identified past and existing facilities in the area that involved the use of hazardous materials (refer to Appendix B).

A soil stockpile was observed on the project site adjacent to the excavated area for which no documentation was available. In addition, the Phase I Assessment identified on and off-site uses (e.g., gas stations, underground storage tanks) that could have resulted in the release of hazardous substances affecting the project site. A Phase II evaluation was conducted to determine the extent of any contamination. The Phase II work included collection of soil, soil gas, and groundwater samples from eight locations on the project site for laboratory analysis. Results of the lab testing indicated that the site did not contain hazardous substances in excess of any regulatory health standards.

Impacts and Mitigation

Thresholds per CEQA Checklist

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
7. HAZARDS AND HAZARDOUS MATERIALS. Would the project:					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				X	1, 7
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X		1, 7
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school?				X	1
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X	7
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X	1
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X	1
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X	1
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X	1

Discussion

The project is not located within an airport land use plan, nor is it within two miles of any airports. The proposed residential use would not emit hazardous emissions or involve the handling of hazardous materials. In addition, the project is not located along an evacuation route and would not otherwise interfere with an emergency evacuation plan, nor would it result in any impacts associated with wildland fires.

Phase II investigation of soil, soil gas, and groundwater samples from the project site indicate that the property has not been impacted by hazardous materials, and no further study is recommended. Due to its age, the existing commercial building on the site may, however, contain asbestos containing materials (ACMs) and lead-based paint. Specific analytical testing for these materials would be conducted prior to any demolition activities, and suspect materials removed prior to demolition, as set forth in the standard measures below.

The project would not result in significant impacts associated with hazards and hazardous materials with implementation of the following standard measures.

Standard Measures

- In conformance with state and local laws, a visual inspection/pre-demolition survey, and possible sampling, will be conducted prior to the demolition of the building to determine the presence of asbestos-containing materials and/or lead-based paint.

- All potentially friable asbestos-containing materials shall be removed in accordance with National Emissions Standards for Hazardous Air Pollutants (NESHAP) guidelines prior to building demolition or renovation that may disturb the materials. All demolition activities will be undertaken in accordance with Cal/OSHA standards, contained in Title 8 of the California Code of Regulations (CCR), Section 1529, to protect workers from exposure to asbestos. Materials containing more than one percent asbestos are also subject to Bay Area Air Quality Management District (BAAQMD) regulations.

- During demolition activities, all building materials containing lead-based paint shall be removed in accordance with Cal/OSHA Lead in Construction Standard, Title 8, California Code of Regulations 1532.1, including employees training, employee air monitoring and dust control. Any debris or soil containing lead-based paint or coatings will be disposed of at landfills that meet acceptance criteria for the waste being disposed.

H. HYDROLOGY AND WATER QUALITY

Setting

The project site is essentially flat and lies at an elevation of about 104 feet above mean sea level. Storm runoff from the project site currently flows into onsite drains that connect with the City's existing storm drainage system. Impervious surfaces, consisting of the existing building and pavement, cover the north portion of the site. The excavated areas are generally bare.

The project site does not contain any natural drainages or waterways. The nearest waterway is Coyote Creek, located about ¾ of a mile east of the site. The Flood Insurance Rate Maps issued by the Federal Emergency Management Agency (FEMA) indicate that the project site is located within Zone D, defined as areas of "undetermined but possible flooding." Zone D areas are not subject to flood management provisions.

The project site is located within the watershed of Guadalupe River, which drains to South San Francisco Bay and is within the jurisdiction of the San Francisco Regional Water Quality Control Board (RWQCB). San Jose is required to comply with the National Clean Water Act regulations regarding the reduction of non-point source pollutants, as mandated by the National Pollutant Discharge Elimination System (NPDES) and regulated by the RWQCB. The NPDES permits typically establish Waste Discharge Requirements (WDRs), which include discharge prohibitions, effluent limitations, receiving water limitations, and other provisions to protect water quality. The NPDES storm water program requires the implementation of best management practices (BMPs).

In 2001, the RWQCB reissued WDRs under the NPDES program for the discharge of storm water runoff (NPDES Permit No. CAS0299718, Regional Board Order No. 01-024), through the implementation of the Storm Water Management Plan, which describes a framework for management of storm water discharges. Order No. 01-124 has been amended to include Provision C.3. that identifies new and redevelopment performance standards to address post-construction impacts on storm water quality.

City of San Jose Policy (6-29) requires all new and redevelopment projects to implement post-construction best management practices (BMPs) and treatment control measures (TCMs) to the maximum extent practicable. This policy also establishes specific design standards for post-construction TCMs for projects that create, add, or replace 10,000 square feet or more of impervious surfaces. In addition, City of San Jose Post-Construction Hydromodification Management Policy (Policy 8-14) requires storm water discharges from new and redevelopment projects that create or replace 10,000 or more of impervious surfaces to be designed to control project-related runoff, where such runoff is likely to cause increased erosion, siltation, or other impacts to beneficial uses of local rivers, streams, and creeks. This policy establishes specified performance criteria for post-construction hydromodification control measures (HCMs) and identifies projects that are exempt from HCM requirements.

Impacts and Mitigation

Thresholds per CEQA Checklist

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
8. HYDROLOGY AND WATER QUALITY. Would the project:					
a) Violate any water quality standards or waste discharge requirements?				X	1, 2

ENVIRONMENTAL IMPACTS		Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local ground water table level (for example, the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X	1, 2
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.			X		1, 2, 8
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?			X		1, 2, 8
e)	Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?			X		1, 2, 8
f)	Otherwise substantially degrade water quality?			X		1, 2, 8
g)	Place housing within a 100-year flood-hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X	2
h)	Place within a 100-year flood-hazard area structures, which would impede or redirect flood flows?				X	2
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X	1, 2
j)	Inundation by seiche, tsunami, or mudflow?				X	1, 2

Discussion

Flooding/Drainage

The project site is approximately 1.16 acres, or 50,406 square feet, in size. The property is currently covered with 4,778 square feet of impervious surfaces, in the form of an existing building footprint and pavement. As shown in Table 1, the project is estimated to create an additional 26,146 square feet of impervious surfaces, resulting in a 51.8% net increase of impervious area on the site.

A storm water control plan (SWCP) is proposed for the project that includes the following features, as shown in Figure 7:

- A vegetated bioswale along the north side of the Third Street driveway.
- An approximately 12,000 square foot landscaped green roof on the second floor.

SOIL TYPE	:	STIFF CLAY
DEPTH TO GROUND WATER (VERIFY WITH SOIL'S REPORT)	:	5–13.5 FT
FEMA FLOOD ZONE	:	ZONE D
100 YR FLOOD ELEVATION	:	NOT DETERMINED

DRAINAGE AREAS FOR SWALE–1

IMPERVIOUS AREA

Driveway	:	0.15 ac
Walkway	:	0.07 ac
Courtyard	:	0.04 ac
Deck	:	0.04ac
Roof	:	0.34 ac
TOTAL IMP. AREA	:	0.64 ac
SELF–TREATING AREA	:	0.16 ac
LIVING ROOF	:	0.33 ac
TOTAL DRAINAGE AREA	:	1.13 ac

WATER QUALITY POST CONSTRUCTION TREATMENT CONTROL MEASURES

(Per Post–Constuction Urban Runoff Management Policy No. 6–29)

1) TREE CREDIT

TREE SPECIES & LOCATION :		SEE LS PLAN
NO. OF DECIDUOUS TREES	=	3
NO. OF EVERGREEN TREES	=	14
NO. OF EVERGREEN TREES @ PODIUM LEVEL	=	6
IMPERVIOUS AREA THAT CAN BE TREATED BY TREES	=	3x100+20x200= 4300 sf= 0.1ac
	=	15% OF TOTAL IMP. AREA
IMPERVIOUS AREA TO BE TREATED BY SWALE	=	0.64–0.1= 0.54 ac

2) DESIGN OF VEG. SWALE BASED ON FLOW HYDRAULIC DESIGN c.

SWALE 1

Q	=	C. I. A
C	=	0.9
I	=	0.2 in/hr
A	=	0.54 ac
Q	=	0.1 cfs

TRAPEZOIDAL SWALE SECTION

SIDE SLOPE	:	5:1
LONG. SLOPE(S)	:	0.01
DEPTH (ft)	:	0.3
FREE BOARD (ft)	:	0.5
TOP WIDTH (ft)	:	10.0
BOTTOM WIDTH (ft)	:	2.0
MANNING'S n	:	0.2
RETENTION TIME(mnt)	:	10
LENGTH REQUIRED (ft)	:	56
LENGTH PROVIDED (ft)	:	110

10 YR DESIGN STORM

(SANTA CLARA DRAINAGE MANUAL, SANJOSE 10YR CURVE)

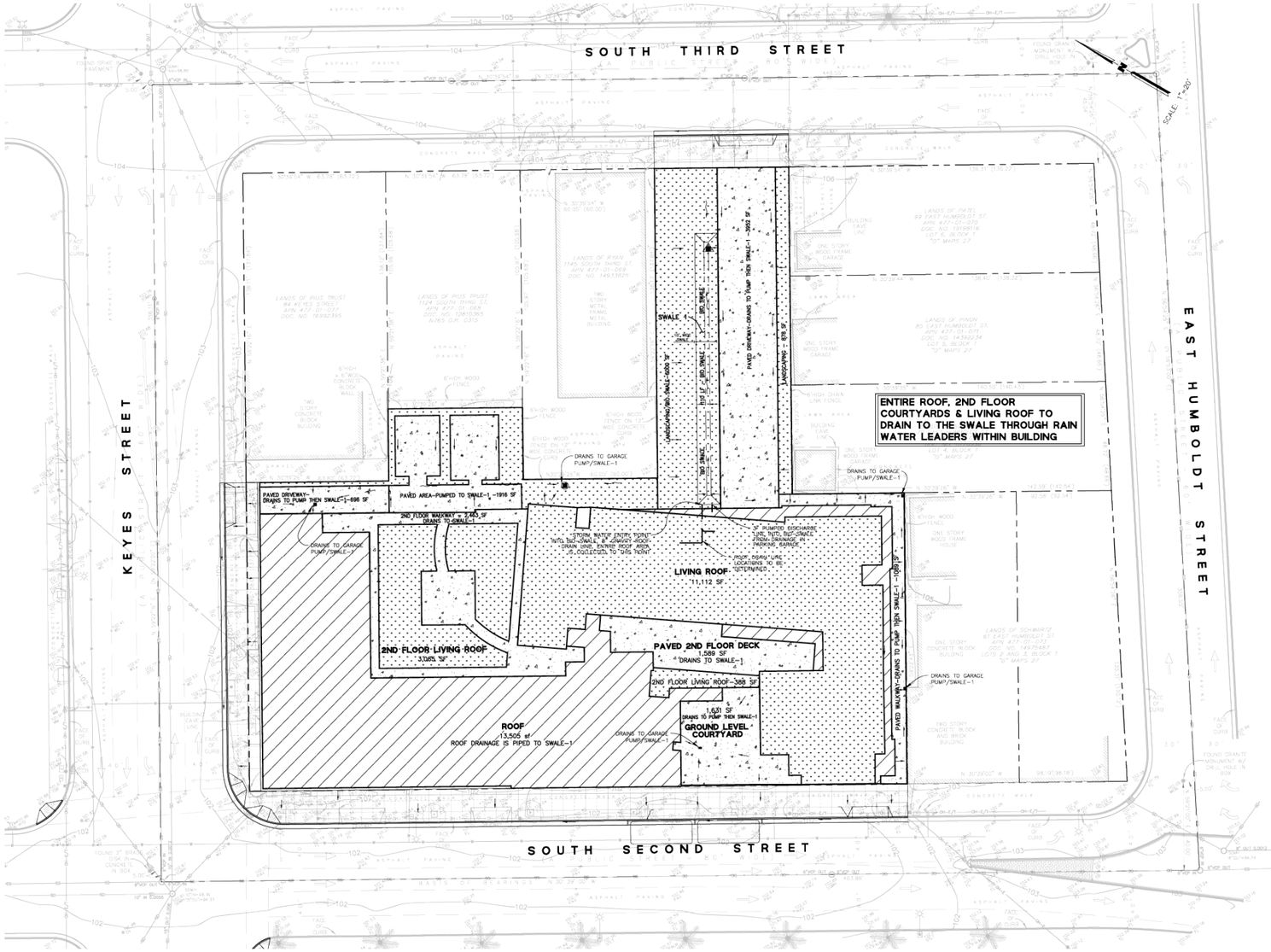
Q	=	C. I. A
C	=	0.9
I	=	1.75 in/hr
A	=	1.13 ac
Q	=	1.8 cfs

CAPACITY OF THE TRAPEZOIDAL SWALE PER MANNING'S FORMULA

$Q = \frac{1.486}{n} \times A \times (A/P)^{(2/3)} \times S^{1/2}$

A	=	4.8 sf
P	=	10.25 ft
Q	=	2.15 cfs

SOURCE CONTROL MEASURES	:	COVERED PARKING AREAS, COVERED TRASH ENCLOSURES
LS/ PLANT MATERIAL	:	SEE LS PLANS
POLLUTANT SOURCE	:	DRIVEWAY, ROOF, COURTYARD, OPEN SPACES
POLLUTANTS	:	SEDIMENT (FINE), TPH, TRASH
INSPECTION	:	SWALES– AT LEAST TWICE ANNUALLY FOR EROSION, DAMAGE TO VEGETATION, , SEDIMENT AND DEBRIS ACCUMULATION AND POOLS OF STANDING WATER.
MAINTENANCE	:	SWALES– PERIODIC MOWING, WEED CONTROL, WATERING DURING DROUGHT CONDITIONS, RESEEDING OF BARE AREAS, CLEARING OF DEBRIS AND BLOCKAGES AND MAINTAINING PROPER SLOPES AND HEALTHY GRASS COVER. IF THE CHANNEL DEVELOPS RUTS OR HOLES, REPAIR WITH SUITABLE SOIL THAT IS TAMPED AND SEEDED. TREES– APPROVED FOR TREE CREDIT SHOULD BE MAINTAINED AND PROTECTED FOR THE LIFE OF THE DEVELOPMENT.
RECEIVING WATER BODY	:	COYOTE CREEK



Source: Carrol Engineering, 2008

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Storm Water Control Plan

Figure 7

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Table 2 Pervious and Impervious Surfaces Comparison						
	Existing Condition (s.f.)	**%**	**Proposed Condition (s.f.)**	**%**	**Difference (s.f.)**	**%**
Site (acres): 1.16	**Site (s.f.): 50,406**					
Building Footprint(s) *(Rooftop not including living roof areas)*	1,768	3.5%	16,943	33.6%	15,175	+30.1%
Living Roof	0	0%	12,362	24.5%	12,362	+24.5%
Parking/Vehicle Hardscape	2,522	5.0%	6,623	13.2%	4,101	+8.2%
Sidewalks, Patios, Paths, etc.	488	1.0%	7,358	14.6%	6,870	+13.6%
Landscaping	159	0.3%	7,120	14.1%	6,961	+13.8%
Undeveloped	45,469	90.2%	0	0%	-45,469	-90.2%
Total	**50,406**	**100%**	**50,406**	**100%**	**0**	**0%**
Impervious Surfaces	4,778	9.5%	30,924	61.3%	26,146	+51.8%
Pervious Surfaces	45,628	90.5%	19,482	38.7%	-26,146	-51.8%
Total	**50,406**	**100%**	**50,406**	**100%**	**0**	**0%**

As presented in Figure 7, runoff from all roofs, parking areas, accessways, and courtyards will be directed via downspouts, pipes, and a pump into the vegetated bioswale prior to being discharged into the City's storm drain system. The project will routinely maintain these facilities to insure optimum functionality.

With implementation of the proposed SWCP, the project will not alter the existing drainage pattern in the area. The project would increase the amount of impervious surfaces on the site compared with existing conditions, resulting in an increase in storm water runoff. The project would result in a net increase in runoff from the site of approximately 1.29 cubic feet per second (cfs) for the 10-year storm and approximately 1.77 cfs for the 100-year storm.

The proposed treatment control measures in the SWCP will somewhat delay the discharge to the City's drainage system. The project would result in a minor increase in peak runoff; however, no new drainage impacts would occur since the storm drain system designed for the site and the City's system have adequate capacity to accommodate the new runoff. The project would be subject to all legal requirements for installation of appropriate drainage facilities.

Water Quality

Construction of the project would require demolition and grading activities that could result in a temporary increase in erosion affecting the quality of storm water runoff. This increase in erosion is expected to be minimal, due to the flatness of the site and moderate erosion potential of the soils. However, surface runoff from proposed development would generate urban pollutants from parking areas that could affect water quality. These pollutants include oil, grease, and trace metals from roadway pavement, as well as sediment from rooftops.

The proposed SWCP described above includes measures to collect and treat site and roof runoff prior to discharge into the City's existing drainage system, which would improve the water quality of runoff from the site compared to existing conditions.

Based on the above discussion, the project would result in less-than-significant impacts to hydrology and water quality with implementation of the standard measures below.

Standard Measures

Construction Measures

- Obtain and comply with the NPDES General Construction Activity Storm Water Permit. Prior to construction, the developer shall file a Notice of Intent and develop, implement, and maintain a Storm Water Pollution Prevention Plan (SWPPP) to control the discharge of storm water pollutants including sediments associated with construction activities.
- Incorporate Best Management Practices (BMPs) into the project to control the discharge of storm water pollutants including sediments associated with construction activities. Examples of BMPs are contained in the publication *Blueprint for a Clean Bay*.
- Prior to the issuance of a grading permit, the applicant may be required to submit an Erosion Control Plan to the City Project Engineer, Department of Public Works, 200 E. Santa Clara Street, San Jose, CA 95113. The Erosion Control Plan may include BMPs as specified in ABAG's *Manual of Standards Erosion & Sediment Control Measures*. For additional information about the Erosion Control Plan, NPDES Permit requirements, or the documents mentioned above, please contact the Department of Public Works at (408) 535-8300.
- Comply with the City of San Jose Grading Ordinance, including erosion and dust control during site preparation. Comply with the San Jose Zoning Ordinance requirements for keeping adjacent streets free of dirt and mud during construction. The following specific BMPs shall be implemented to prevent storm water pollution and minimize potential sedimentation during construction:
  - Restrict grading to the dry season (April 15 through October 15).
  - Place burlap bags filled with drain rock around storm drains to route sediment and other debris away from the drains.
  - Provide temporary cover of disturbed surfaces to help control erosion during construction.
  - Provide permanent cover to stabilize the disturbed surfaces.
  - Utilize stabilized construction entrances or wash racks.
  - Implement damp street sweeping.

Post-Construction Measures

- Prior to the issuance of a Planned Development Permit, the applicant shall provide details of specific Best Management Practices (BMPs) including, but not limited to, bioswales, disconnected downspouts, landscaping to reduce impervious surface area, and inlets stenciled "No Dumping – Flows to Bay," to the satisfaction of the Director of Planning, Building and Code Enforcement.
- The project shall comply with Provision C.3 of NPDES permit Number CAS0299718, which provides enhanced performance standards for the management of storm water of new development.
- The project shall comply with applicable provisions of the following City Policies: 1) Post-Construction Urban Runoff Management Policy (6-29), which establishes guidelines and minimum BMPs for all projects, and 2) Post-Construction Hydromodification Management Policy (8-14), which provides for numerically sized (or hydraulically sized) TCMs."

I. LAND USE

Setting

The project site is located within San Jose City limits. The north side of the property is currently occupied by a Pizza Hut business in a single building with associated parking. The south portion of the site shows evidence of previous excavation conducted for a previous project. The site is bordered by Keyes Street to the north, commercial uses to the northeast, residential to the east, retail to the south, and Second Street to the west.

The project site is identified within the Martha Gardens Planned Community in the San Jose 2020 General Plan Land Use/Transportation Diagram. The property is designated *Commercial/Mixed Use*. The Martha Gardens Planned Community is generally bound by First Street to the west, Sixth Street to the east, Highway 280 to the north, and Hollywood Avenue/Humboldt Street to the south. Surrounding properties are designated *Commercial/Mixed Use* and *Preservation Single Family Residential* to the south and southeast, *Commercial/Mixed Use* to the east, *High Density Residential (25-50 du/ac)* to the north across Keyes Street, and *Public Parks and Community Facilities* to the west across Second Street. The project site is currently zoned Commercial Pedestrian (CP).

The project does not propose any General Plan amendments for the site. The project proponent is applying for a rezoning of the parcel from Commercial Pedestrian to Planned Development to allow the proposed mixed-use development of residential/retail uses.

Impacts and Mitigation

Thresholds per CEQA Checklist

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
9. LAND USE AND PLANNING. Would the project:					
a) Physically divide an established community?				X	1, 2
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			X		1, 3
c) Conflict with any applicable Habitat Conservation Plan or Natural Community Conservation Plan?				X	1

Discussion

The surrounding uses include commercial and residential uses. The proposed mixed retail/residential uses would not divide an established community. The project site is not located within the boundaries of any habitat conservation plans or natural community conservation plans.

This Initial Study identifies potential land use impacts of the project (i.e., air quality, noise, traffic, water quality). These impacts would be reduced to a less-than-significant level with measures identified in this Initial Study. The following discussion addresses the project's consistency with applicable land use plans and potential for conflicts with surrounding uses.

Land Use Conflicts

Land use conflicts can arise from two basic causes: 1) a new development or land use may cause impacts to persons or the physical environment in the vicinity of the project site or elsewhere; or 2) conditions on or near the project site may have impacts on the persons or development introduced onto the site by the new project. Potential incompatibility may arise from placing a particular development or land use at an inappropriate location, or from some aspect of the project's design or scope.

The project site is bordered by Keyes Street to the north, which is lined with primarily commercial businesses. Commercial uses, including a restaurant, beauty salon, auto repair shop and warehouse are located east and northeast of the site. Single family homes lie southeast of the site along Humboldt Street and Third Street, and commercial retail uses are located directly adjacent to the south. Second Street and Cadwallader Park are located west of the site.

The project would introduce mixed commercial and residential uses on approximately 1.16 acres of land designated in the City's General Plan for commercial/mixed uses. Conversion of the site from vacant land and commercial uses to a mixed retail/residential complex would not introduce substantial new hazards, noise, or other nuisances that would adversely affect existing,

surrounding residences and commercial businesses. Conversely, surrounding uses have not been identified as posing any hazards to the site or proposed residential uses (see Appendix A). Implementation of proposed measures, including landscaping around portions of the site and the establishment of 10 to 15-foot setbacks at the property boundaries, would minimize land use conflicts. In addition, the southeast corner of the proposed building that abuts the rear yard of an existing residence would be stepped down in height in order to maintain compatibility with existing residential development along Hollywood Street. The project would also be developed in conformance with the City's Residential Design and Commercial Design Guidelines to minimize land use conflicts.

Based on the above discussion, the project would not result in significant land use conflicts.

Consistency with Land Use Plans

San Jose 2020 General Plan. The San Jose 2020 General Plan land use/transportation diagram currently designates the project site within the Martha Gardens Planned Community. The Martha Gardens Specific Plan is the City's specific policy for governing development in the Martha Gardens Planned Community. The objectives of the Martha Gardens Specific Plan are to 1) preserve existing single family development, 2) provide residential infill and intensification compatible with the neighborhood, 3) promote use of historic buildings, 4) provide opportunities for the expansion of the arts, 5) encourage existing viable uses and businesses to remain, 6) encourage neighborhood-serving commercial services, 7) encourage pedestrian facilities and implement traffic calming measures, and 8) provide public open space.

The *Commercial/Mixed Use* designation for the project site allows only commercial uses on the ground floor with housing or office uses on subsequent floors. Commercial and mixed-use buildings should be built to or near the front property line and should be oriented to the sidewalk. Neighborhood commercial uses and services are encouraged throughout the area. The project would be consistent with this designation since it proposes retail on the ground floor level oriented to the property frontage, with residential uses above.

The project proposes affordable residential uses and neighborhood-serving commercial uses on an infill site, is sited to encourage pedestrian access to local services, parks, and public transit, and is compatible with surrounding residential and commercial uses. Overall, the project would be consistent with the policies of Martha Gardens Planned Community and General Plan.

Spartan/Keyes Strong Neighborhoods Initiative and Neighborhood Improvement Plan. The Spartan/Keyes Strong Neighborhoods Initiative and Neighborhood Improvement Plan (SNI/NIP) was developed by the City to improve community conditions, appearance, safety, and services through a variety of policies and programs. The project would introduce a mix of commercial and residential uses on a site containing an existing retail establishment and vacant land. The proposed mixed-use development would be consistent with the goals of the SNI/NIP to provide infill residential housing and neighborhood-oriented commercial development, improve the appearance of the neighborhood, and encourage pedestrian, bicycle, and transit travel. The project would not interfere with the Plan's goals to improve the local community.

Monterey Corridor Redevelopment Area. The project site is located within the Monterey Corridor Redevelopment Area. This redevelopment project area was adopted in 1994 and includes the 2.5-mile commercial district and industrial area from E. William Street to Curtner Avenue. The goals of the redevelopment plan for this corridor include 1) streetscape enhancements, 2) construction of community facilities, and 3) park improvements. Although not specifically relevant to the project, the intent of the proposed rezoning is to provide an attractive retail/residential development that will improve the appearance and amenities along the Monterey Corridor. The project would not interfere with any of the Plan's goals to improve the redevelopment area.

J. MINERAL RESOURCES

Setting

The project is located on a disturbed site and does not contain any known or designated mineral resources.

Impacts and Mitigation

Thresholds per CEQA Checklist

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
10. MINERAL RESOURCES. Would the project:					
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X	1
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?				X	1

Discussion

The project would not impact mineral resources, since none are located on or near the project site.

K. NOISE

Setting

The following discussion is based on a noise analysis prepared for the project Edward L. Pack Associates, Inc. (May 2008). This study is contained in Appendix C.

Regulatory Setting

San Jose 2020 General Plan. The Noise Element of San Jose's 2020 General Plan identifies noise and land use compatibility standards for various land uses. Noise is measured in decibels (dB), and is typically characterized using the A-weighted sound level or dBA. This scale gives greater weight to those frequencies to which the human ear is most sensitive. The City's noise guidelines are expressed in "day/night noise level" (or DNL). The DNL represents the average noise level during a 24-hour period, with a penalty of 10 dBA added to sound occurring between the hours of 10 PM and 7 AM.

The Noise Element identifies noise and land use compatibility standards for various land uses. Residential land uses are considered "satisfactory" up to 60 dBA DNL as the short-range exterior noise quality level, and 55 dBA DNL as the long-range exterior noise quality level. The guidelines state that where the exterior DNL is above the "satisfactory" limit (between 60 and 70 dBA DNL), and the project requires a full EIR, an acoustical analysis should be made indicating the amount of attenuation necessary to maintain an indoor level of a DNL less than or equal to 45 dBA. Noise levels exceeding 70 dBA DNL require that new development would only be permitted if uses are entirely indoors and building design limits interior levels to less than or equal to 45 dBA DNL. Outside activity areas should be permitted if site planning and noise barriers result in levels of 60 dBA DNL or less; however, noise exposures may be allowed up to 65 dBA DNL in noisy environments (e.g., adjacent to major roadways) provided at least one common outdoor area has noise exposures below that level. Noise levels of 65 dBA are consistent with residential land uses per the noise requirements of the U.S. Department of Housing and Urban Development (HUD), Federal Aviation Administration (FAA), and State of California. Applicable policies in the San Jose Noise Element are as follows:

Policy 1. The City's acceptable noise level objectives are 55 dBA DNL as the long-range exterior noise quality level, 60 dBA DNL as the short-range exterior noise quality level, 45 dBA DNL as the interior noise quality level, and 76 dBA DNL as the maximum exterior noise level necessary to avoid significant adverse health effects. These objectives are established for the City, recognizing that the attainment of exterior noise quality levels in the environs of the San Jose International Airport, the Downtown Core Area, and along major roadways may not be achieved in the time frame of this Plan. To achieve the noise objectives, the City should require appropriate site and building design, building construction and noise attenuation techniques in new residential development.

Policy 9. Construction operations should use available noise suppression devices and technology.

2007 California Building Code. New multi-family housing in the State of California is subject to the environmental noise limits set forth in the 2007 California Building Code. The noise limit is a maximum interior noise level of 45 dBA DNL. Where exterior noise levels exceed 60 dBA DNL, a report must be submitted with the building plans describing the noise control measures that have been incorporated into the design of the project to meet the noise limit.

The standards set in California Code Title 24 apply to multi-family housing structures. The standards specify the need for an acoustical analysis to be performed when exterior noise exposure

may exceed 60 db DNL at planned dwellings. Title 24 also specifies minimum sound insulation ratings, Sound Transmission Class (STC) ratings, and Impact Insulation Class (IIC) ratings.

Existing Noise Environment

Traffic along First Street, Second Street, Keyes Street, and aircraft operations are the predominant noise sources affecting the site. Field measurements of existing ambient noise levels in the project area were conducted on August 15, 2006 to August 16, 2006. The survey included 24-hour noise measurements at three locations: 1) to the west of the property 40 feet from the centerline of Second Street and 135 feet from the centerline of South First Street; 2) 65 feet from the centerline Third Street, and 3) 100 feet from the centerline of Keyes Street. In addition, a short-term (one hour) noise measurement was made at the property line with the adjacent commercial uses to the northeast.

Table 2 presents the results of the noise measurements. The hourly average noise level at the adjacent automotive business was measured at 51 dB L_{eq}. In addition, noise generated by aircraft operations at the Mineta San Jose International Airport show the project site within the 61 dB DNL noise contour (based on 3rd Quarter Noise Contour Map).

Table 3
Summary of Noise Measurement Data

Noise Measurement Location	L_{eq} Daytime (dBA)	L_{eq} Nighttime (dBA)
1) West of the property 40 feet from the centerline of Second Street and 135 feet from the centerline of First Street	61.3 – 65.3	52.8 – 63.4
2) 65 feet from the centerline Third Street	58.0 – 62.5	46.4 – 61.0
3) 100 feet from the centerline of Keyes Street	59.7 – 65.0	49.9 – 60.1
Source: Edward L. Pack Associates, Inc., 2007		

Impacts and Mitigation

Thresholds per CEQA Checklist

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
11. NOISE. Would the project result in					
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?			X		3, 9
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?				X	1
c) Substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X		9
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X		1, 9

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X	1, 9
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X	1, 9

Discussion

The CEQA Guidelines states that a project would normally be considered to have a significant impact if noise levels conflict with adopted environmental standards or plans, or if noise generated by the project would substantially increase existing noise levels at sensitive receivers on a permanent or temporary basis. For this project, a significant noise impact would occur if exterior noise levels would exceed 60 dBA DNL in exterior use areas or if interior day-night average noise levels would exceed 45 dBA DNL.

The future traffic volumes for First Street are predicted to increase from the existing average daily traffic (ADT) of 21,250 to 35,000 (2020). Future volumes on Second Street are predicted to increase from the existing 8,750 to 10,000 ADT. Future volumes for Keyes Street are predicted to increase from existing 15,000 to 37,500 ADT. These increases in volumes would result in street noise level increases of two dB along First Street, one dB along Second Street, one dB along Third Street, and four dB along Keyes Street.

Noise levels from aircraft at the San Jose International Airport are estimated to increase from 61 dB DNL to 64 dB DNL in the project area for 2010, based on the airport's predicted noise contours. Future noise levels at commercial businesses adjacent to the project site are unknown, but are assumed to be similar to present levels.

Noise Impacts on Proposed Residences

The noise assessment evaluated the noise impacts on proposed residential units (exterior and interior spaces) based on the City of San Jose and State of California standards. The results are summarized in Table 4 and described below.

Table 4
Existing and Future Exterior Noise Exposures (dB DNL)

Westerly Façade and Balconies of B1 Units	Distance to Source	Existing Noise Exposure	Future Noise Exposure
First St.	130 ft.	62	64
Second St.	40 ft.	60	61
Aircraft	--	61	64
TOTAL NOISE EXPOSURE		**66**	**68**
Residential Balcony	**Distance to Source**	**Existing Noise Exposure**	**Future Noise Exposure**
First St.	130 ft.	61	63
Second St.	40 ft.	58	59
Keyes St.	44 ft.	60	64
Aircraft	--	61	64
TOTAL NOISE EXPOSURE		**66**	**69**

Table 4 Existing and Future Exterior Noise Exposures (dB DNL)			
Easterly Façade	**Distance to Source**	**Existing Noise Exposure**	**Future Noise Exposure**
Third St.	215 ft.	48	49
JTR Distributors	280 ft.	47	46
Aircraft	--	59	62
TOTAL NOISE EXPOSURE		**60**	**62**
Residential Terrace	**Distance to Source**	**Existing Noise Exposure**	**Future Noise Exposure**
First St.	185	60	62
Second St.	90	55	56
Aircraft	--	61	64
TOTAL NOISE EXPOSURE		**67**	**69**
Northerly Façade	**Distance to Source**	**Existing Noise Exposure**	**Future Noise Exposure**
Keyes St.	42 ft.	63	67
First St., Second St.	290 ft., 170 ft.	55	56
Aircraft	--	61	64
TOTAL NOISE EXPOSURE		**65**	**69**
Quiet Court	**Distance to Source**	**Existing Noise Exposure**	**Future Noise Exposure**
Keyes St.	100 ft.	54	58
Aircraft	--	59	62
Reinegger's Auto	52 ft.	47	47
TOTAL NOISE EXPOSURE		**60**	**64**
Panhandle Common Area	**Distance to Source**	**Existing Noise Exposure**	**Future Noise Exposure**
South Third St.	40-185 ft.	49-59	50-60
JTR Distributors	105-250 ft.	46-56	45-55
Aircraft	1,450-1,530 ft.	43-56	46-59
TOTAL NOISE EXPOSURE		**51-64**	**52-66**
Source: Edward L. Pack Associates, Inc., 2008			

Exterior Noise Exposure. The exterior noise exposures at the most impacted planned building setback from First Street and Second Street and in the B1 unit balconies will increase from 66 to 68 dB DNL under future conditions, which will be up to eight dB in excess of the City and state standards. The exterior noise exposures at the most impacted planned residential balcony at the corner of Keyes Street and Second Street will increase from 66 to 69 dB DNL under future conditions, which will be up to nine dB in excess of the City's standards. The exterior noise exposures at the most impacted planned building setback from Keyes Street will increase from 65 to 69 dB DNL under future conditions, which will be up to nine dB in excess of the state standard. The exterior noise exposures at the most impacted planned building setback from Third Street will increase from 60 to 62 dB DNL under future conditions. The noise exposures at units facing east will be due primarily to aircraft. The noise exposures will be up to two dB in excess of the state standard.

Commercial operations at JTR Distributors adjacent to the site generate an estimated noise exposure of 46 dB DNL at the most impacted residential units. In addition, the auto shop (Reinegger Frame & Wheel) generates an estimated noise exposure of 47 dB DNL at the most

impacted units. These noise exposures are within the 55 dB DNL limit of the City's standard for non-transportation noise sources.

As described above, some exterior balcony areas would exceed the City's standard of 60 dBA. This may be considered acceptable by the City, since small balconies on multi-family developments have limited use due to their size and are often facing major roadways that would necessitate high solid railings or total enclosure that would limit the balcony's desirability.[2] In addition, the San Jose General Plan states that "...areas adjacent to major roadways have been identified as special noise impact areas. Because of the nature of these special areas, it may be impossible to attain the desired outdoor noise level of 55 dBA DNL or even 60 dBA DNL in the near term without eliminating the beneficial attributes of the exterior spaces." The following measure is recommended to reduce noise at balconies, although the impact is considered less-than-significant:

- Construct 42" high acoustically-effective railings at all proposed balconies, decks, and terraces. The railing height is in reference to the nearest balcony, deck, or terrace floor elevation. Noise reduction from the railings would be 3-4 decibels.

The project proposes common outdoor areas including the "residential terrace" and "quiet court" as well as a common outdoor area in the easterly panhandle that extends to Third Street. Noise levels at the quiet court area will be up to 64 dB DNL under future conditions, which is up to four dB in excess of the City's standards. For the residential terrace, noise levels will be 67 to 69 dB DNL under future conditions. The noise exposure at the terrace includes a six dB increase for sound reflections within the surrounded space and a three dB reduction due to the partial noise shielding provided by the buildings. The noise exposures at the residential terrace will be up to nine dB in excess of the City's standards. The majority of the panhandle common area will be about 65 dB DNL or less, which is up to five dB in excess of the City's standards.

City policy considers exterior noise in the Downtown Core Area, in the vicinity of the airport, and adjacent to major roadways that cannot feasibly be reduced to 60 dBA DNL be considered mitigated to a less-than-significant level if noise levels in proposed outdoor common use areas and/or private balcony/patio areas can be reduced to 65 dBA DNL or less. (The 65 dBA DNL level is consistent with the residential standards of HUD, the FAA, and the State of California.) Since the majority of the common outdoor areas for the project will have noise levels of 65 dBA or less, the exterior noise exposures represent a less-than-significant impact.

Interior Noise Exposure. The interior noise exposures in the most impacted living spaces closest to First Street and Second Street will increase from 51 to 53 dB DNL under future conditions, which is eight dB in excess of the City and state standards for interior spaces.

The interior noise exposures in the most impacted living spaces along Keyes Street will increase from 50 to 54 dB DNL under future conditions, which is nine dB in excess of the City and state standards for interior spaces.

[2]Note: Historically the City has applied its exterior noise standard to larger exterior living areas such as rear yards, patios, and large balconies/decks.

The interior noise exposures in the most impacted living spaces facing east toward Third Street will increase from 45 to 47 dB DNL under future conditions, which is two dB in excess of the City and state standards for interior spaces.

Interiors at some units could exceed 45 dBA DNL without the incorporation of noise insulation features into the project's design. This potentially impact would be reduced to a less-than-significant impact with implementation of the following standard measures.

Standard Measures

Interior

- The project shall incorporate building sound insulation requirements to meet the requirements of the California Building Code to reduce interior noise levels to 45 dBA DNL or lower. The following construction measures shall be incorporated into the project to ensure that interior noise levels will be adequately reduced to 45 dBA DNL or lower:

    - All windows and glass doors of living spaces shall be required to be closed at all times.
    - At the living spaces with a direct side view of First Street, Second Street, or Keyes Street, the project shall install windows and glass doors rated minimum Sound Transmission Class (STC) 29. Any other type of glass will be acceptable for the other noise impacted living spaces.
    - The project shall include for all living spaces forced-air mechanical ventilation satisfactory to the local building official for all new units with closed window/glass door requirements, so that windows can be closed at the occupant's discretion to control noise.

Construction Noise

The nearest existing residential receivers are located southeast of the project site along Humboldt Street, approximately 20 feet from the closest project boundary. Noise generated by project construction and demolition activities would substantially increase noise levels in the project vicinity, albeit on a temporary basis. The demolition and infrastructure phases of construction require heavy equipment that generates the highest noise levels. Typical hourly average construction generated noise levels are about 81 dBA to 88 dBA measured at a distance of 50 feet from the center of the site during busy construction periods (e.g., earth moving equipment, use of impact tools, etc.). Construction noise levels would vary on a day-to-day basis depending on the specific activities occurring at the site. Construction noise levels decrease at a rate of six dBA per each doubling of distance between the noise source and receiver. Given the proximity of sensitive receivers, the project would result in significant noise impacts during construction that would be reduced to less-than-significant levels with implementation of the standard measures below.

Standard Measures

- Construction shall be limited to the hours of 7 AM to 7 PM Monday through Friday for any on-site or off-site work within 500 feet of any residential unit. Construction outside of these hours

may be approved through a development permit based on a site-specific construction noise mitigation plan and a finding by the Director of Planning, Building and Code Enforcement that the construction noise mitigation plan is adequate to prevent noise disturbance of affected residential uses.

- Locate stationary noise generating equipment as far as possible from sensitive receptors. Acoustically shield stationary noise sources when located in areas adjoining sensitive receptors.
- Temporary eight-foot plywood noise barriers shall be constructed at the project perimeter to shield noise-sensitive land uses within 50 feet of the project site.
- Utilize "quiet" air compressors and other “quiet” equipment where technology exists.
- Prohibit unnecessary idling of construction equipment.
- Properly maintain and muffle all internal combustion-driven construction equipment.
- The contractor shall prepare a detailed construction plan identifying the schedule for major noise-generating construction activities. The construction plan shall identify a procedure for coordination with the adjacent noise sensitive residential uses so that construction activities can be scheduled to minimize noise disturbances.
- Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.

L. POPULATION AND HOUSING

Setting

The population of the City of San Jose is 953,679 (California Department of Finance, 2006). According to the Association of Bay Area Governments (ABAG) *Projections 2007 Forecasts for the San Francisco Bay Area to the Year 2030*, the population is projected to be 1,336,900 within the City of San Jose's Sphere of Influence in 2030. The total number of households is projected at 422,720, with an average of 3.20 persons per household.

Impacts and Mitigation

Thresholds per CEQA Checklist

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
12. POPULATION AND HOUSING. Would the project:					
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X	1
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X	1

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X	1

Discussion

The project would not displace people or existing housing. The project would provide 139 affordable residential units in the City of San Jose. The project would increase housing and could increase the residential population in the City by up to 143 people.[3] The additional housing and associated population increase would represent a very small percentage of the total City population of 953,679, and is well within the range of anticipated population growth for the City.

Implementation of the proposed project will have a less-than-significant impact on population and housing in San Jose.

M. PUBLIC SERVICES

Setting

Fire Protection: Fire protection services are provided to the project site by the San Jose Fire Department (SJFD). The closest fire station to the project site is Station 3, located on 98 Martha Street approximately 1.25 miles north of the project site.

Police Protection: Police protection services are provided to the project site by the San Jose Police Department (SJPD). The project is located within Beat Building Block (BBB) 209 of the SJPD's service area. The most frequent calls for service in BBB 209 from July 2006 to July 2007 were vehicle stops, disturbances, pedestrian stops, and parking violations.

Schools: The project is located within the San Jose Unified School District (K-12). The nearest schools in the project area, together with current enrollment figures, are presented below.

School	Address	Approx. Distance (miles)	Enrollment
Washington Elementary School	100 Oak Street San Jose, CA 95110	0.19 miles	628
Herbert Hoover Middle School	1635 Park Avenue San Jose, CA 95126	2.62 miles	1,161
Broadway High School	4825 Speak Lane San Jose, CA 95112	1.42 miles	221

State law (Government Code §65996) identifies the payment of school impact fees as an acceptable method of offsetting a project's impact on school facilities. In San Jose, developers

[3] Based on one person per efficiency unit, 1.5 persons per each one-bedroom unit, and two persons per each two-bedroom unit.

can either negotiate directly with the affected school district or make a payment of $2.63 per square foot of multi-family units (prior to the issuance of a building permit) and $0.42 per square foot of new commercial retail uses. The school district is responsible for implementing the specific methods for mitigating school impacts under the Government Code.

Parks: Parks in the project vicinity consist of the following: 1) Kelly Park, a large City park facility located about ¾ of a mile east the site; and 2) Guadalupe River Park, located in downtown San Jose about a mile north of the site.

The City of San Jose has adopted the Parkland Dedication Ordinance (PDO) and Park Impact Ordinance (PIO), which require residential developers to dedicate public park land and/or pay in-lieu fees to compensate for the increase in demand for neighborhood parks. Low, very-low, and extremely-low income restricted units are exempt from these requirements.

Libraries: The San Jose Public Library System consists of one main library and 18 branch libraries. The nearest branch to the project site is the Martin Luther King Jr. Library Branch, located approximately 1.19 miles north of the site at 150 East San Fernando Street. Several other libraries are in the area. The Latin American Branch Library is located 0.21 miles northwest of the project site at 921 First Street, and the Santa Clara County Law Library is located on 360 First Street about 1.7 miles northwest of the project site.

Impacts and Mitigation

Thresholds per CEQA Checklist

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
13. PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:					
a) Fire protection?			X		1, 2
b) Police protection?			X		1, 2
c) Schools?			X		1
d) Parks?			X		1
e) Other public facilities?			X		1, 2

Discussion

Public services are generally provided to the community as a whole, and financed on a community-wide basis. The proposed residential complex is located on a currently partially developed site in an urban area that is served by municipal providers.

The project would result in an incremental increase in the demand for public services from the development of 139 new residential units and approximately 11,010 square feet of retail space. The project would be subject to developer fees to accommodate the incremental demand on services, including the state-mandated school district impact fee and City-required park

dedication in-lieu fee. The project would not significantly impact public services or require the construction of new or remodeled public services facilities, due to the limited size of this infill development.

With implementation of the following standard measures, the project would result in less-than-significant impacts on public services.

Standard Measures

- The developer shall pay a school impact fee to the School District in accordance with California Government Code §65996 to offset the increased demands on school facilities.

- The project shall conform to the City's Parkland Dedication Ordinance (PDO) and Park Impact Ordinance (PIO) (Municipal Code Chapter 19.38).

N. RECREATION

Setting

Public parks and recreational facilities in the City of San Jose include regional and neighborhood parklands, open space, and community centers. Recreational facilities within the project vicinity consist of the following: 1) Kelly Park, a large City park facility located about ¾ of a mile east the site; and 2) Guadalupe River Park, located in downtown San Jose about a mile north of the site (refer to discussion in **M. Public Services**).

Impacts and Mitigation

Thresholds per CEQA Checklist

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
14. RECREATION. Would the project:					
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X		1
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?				X	1

Discussion

The development of 139 housing units on the project site could increase in the number of residents in the project area by 143 people.[4] This would incrementally increase the demands on recreational facilities. The City of San Jose has adopted the Parkland Dedication Ordinance and

[4] Based on one person per efficiency unit, 1.5 persons per each one-bedroom unit, and two persons per each two-bedroom unit.

Park Impact Ordinance, which require residential developers to dedicate public park land or pay in-lieu fees (or both) to compensate for the increase in demand for neighborhood parks. The project would be required to comply with the City's park ordinances, which would offset impacts to park/recreation facilities. Low, very-low, and extremely-low income restricted units are exempt from these requirements.

With implementation of the following standard measures, the project would result in less-than-significant impacts on recreation.

Standard Measure

- The project shall conform to the City's Parkland Dedication Ordinance (PDO) and Park Impact Ordinance (PIO) (Municipal Code Chapter 19.38).

O. TRANSPORTATION

Setting

A traffic impact analysis was prepared for the project by Hexagon Transportation Consultants (September 2007). The text of this report is contained in Appendix D. The analysis evaluated the potential transportation impacts of the project based on the standards and methodologies set forth by the City of San Jose Level of Service Policy and the Santa Clara Valley Transportation (VTA) Congestion Management Program (CMP). The study included evaluation of AM and PM peak-hour traffic conditions for seven signalized intersections. Freeway level of service analysis was not conducted since the project trips on freeways segments would be less than one percent of the capacity of the segments.

Traffic conditions were evaluated using level of service (LOS) calculations for the peak hours. LOS is a qualitative description of operating conditions ranging from LOS A (free flow conditions with little or no delay) to LOS F (jammed conditions with excessive delays). The City of San Jose LOS standard for signalized intersections is LOS D or better. Traffic conditions were evaluated for 1) existing conditions, 2) background conditions, and 3) project conditions. The traffic study evaluated seven intersections, listed below:

1. First Street and Keyes Street*
2. Second Street and Keyes Street
3. Third Street and Keyes Street
4. Seventh Street and Keyes Street*
5. First Street and Willow Street
6. First Street and Alma Avenue*
7. First Street and Second Street

(*Indicates CMP intersection)

Roadway Network

A description of the roadway network in the project area is provided below.

I-280 is a north-south freeway that extends from San Francisco to San Jose and varies in width between six and eight travel lanes. I-280 is oriented in an east-west direction, is eight lanes wide in the vicinity of the site, and transitions into I-680 east of the US 101 interchange. Access to and from the project site is provided via interchanges with Seventh and Fourth Streets.

SR 87 is a north-south freeway that extends from SR 85 north to US 101. SR 87 is four lanes south of Taylor Street and six lanes north of Taylor Street. SR 87 is currently being widened to six lanes between SR 85 and Taylor Street. Access to the project site is provided via its junctions with I-280 and Alma Avenue.

First Street is a four-lane, north-south street between Alma Avenue and San Carlos Street. South of Alma Avenue, the street changes to Monterey Road. First Street is a one-lane, one-way northbound street between San Carlos Street and Julian Street.

Second Street is a north-south arterial that runs north from its intersection with First Street into downtown. Between First Street and San Carlos Street, Second Street is a three-lane, one-way southbound roadway. Two lanes southbound are provided north of San Carlos Street. Second Street forms the western boundary of the project site and will provide for direct access to the site via one driveway.

Third Street is a three-lane, one-way northbound roadway that extends north from Keyes Street to downtown. Third Street lies along the project site's east boundary and will provide for direct access to the site via one driveway.

Seventh Street is a north-south roadway that begins at Tully Road and continues north to San Salvador Street. North of San Jose State University, Seventh Street extends north and terminates at Commercial Street.

Virginia Street is a two-lane, east-west roadway that generally extends from Bird Avenue to Seventh Street. West of Monterey Road, Virginia Street is classified as a major collector street.

Willow Street is an east-west roadway that extends east from Meridian Avenue to First Street.

Keyes Street is an east-west roadway that extends from Monterey Road and continues to Senter Road, where it becomes Story Road. West of Monterey Road, Keyes Street becomes Goodyear Street. Keyes Streets extends along the project site's north boundary and will provide direct access to the site via one driveway.

Monterey Road (SR 82) is a north-south arterial that runs from central San Jose south to Morgan Hill. In the project area, it is a six-lane arterial. North of Alma Avenue, Monterey Road becomes S. First Street.

Bicycle and Pedestrian Facilities

Class II bikeways (striped bike lanes) are available on Seventh Street and segments of Keyes Street and Senter Road. A Class I bike path is located along SR 87, between Curtner Avenue and Willow Street. Pedestrian facilities consist of sidewalks along the streets in most of the project area.

Transit Service

Existing transit service to the study area is provided by the VTA bus service. Several bus routes serve the project area. The 82 line provides service between Westgate Mall and Mission Street with 30-minute headways during commute hours. Line 25 provides service between the National Hispanic University and De Anza College with 10- to 30-minute headways during commute hours. Other bus lines in the vicinity of the project include lines 66, 68, and 73, which generally provide service to downtown. Several bus stops are located within walking distance of the project site.

The nearest light rail station is the Virginia Station along the Alum Rock-Santa Teresa line. The station is located near SR 87 and Virginia Street, approximately one mile northwest of the project site.

Existing Conditions

The results of the intersection level of service analysis under existing conditions are summarized in Table 4. The results show that all of the study intersections currently operate at an acceptable LOS D or better during the AM and PM peak hours.

Background Conditions

Background traffic volumes were estimated by adding to existing peak hour volumes the projected volumes from approved but unbuilt development in the project area. The added traffic from approved, unbuilt development was provided by the City of San Jose as part of its Approved Trips Inventory (ATI).

The transportation network under background conditions is assumed to be unchanged with the exception of conversion of Second and Third Streets from one-way to two-way streets. This will require lane geometrics to be modified at intersections along Second and Third Streets, between Virginia Street and San Salvador Street. This couplet conversion is expected to occur over the next 20 years; therefore, the traffic analysis evaluated the traffic impacts both with and without the couplet conversion.

The results of the intersection level of service analysis under background conditions are shown in Table 4. The results show that all of the study intersections would operate at an acceptable LOS D or better during the PM peak hour under background conditions.

Impacts and Mitigation

Thresholds per CEQA Checklist

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
15. TRANSPORTATION/TRAFFIC. Would the project:					
a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (for example, result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?			X		10
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				X	10
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X	1
d) Substantially increase hazards due to a design feature (for example, sharp curves or dangerous intersections) or incompatible uses (for example, farm equipment)?				X	1
e) Result in inadequate emergency access?				X	1
f) Result in inadequate parking capacity?			X		1, 10
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (for example, bus turnouts, bicycle racks?				X	1, 10

Discussion

Significance Criteria

A traffic impact is considered significant in the City of San Jose if the following occurs under either peak hour:

- The level of service at the intersection degrades from an acceptable LOS D or better under background conditions to an unacceptable LOS E or F under project conditions, or

- The level of service at the intersection is an unacceptable LOS E or F under background conditions and the addition of project trips causes both the critical-movement delay at the intersection to increase by four or more seconds *and* the demand-to-capacity ratio to increase by 0.01 or more.

Table 5
Intersection Level of Service Summary

Intersection	Peak Hour	Existing		Without Couplet Conversion						With Couplet Conversion					
				Background		Project Conditions				Background		Project Conditions			
		Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C	Ave. Delay	LOS	Ave. Delay	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
1 First St. & Keyes St.*	AM	27	C	28	C	28	C	0.4	0.006	28	C	28	C	0.4	0.006
	PM	29	C	28	C	29	C	0.2	0.002	28	C	29	C	0.3	0.003
2 Second St. & Keyes St.	AM	19	B	20	C	21	C	0.3	0.016	32	C	32	C	0.1	0.003
	PM	28	C	29	C	30	C	1.2	0.023	37	D	37	D	0.6	0.011
3 Third St. & Keyes St.	AM	23	C	23	C	23	C	0.1	0.015	30	C	30	C	0.3	0.013
	PM	15	B	17	B	17	B	0.3	0.013	26	C	26	C	0.1	0.001
4 Seventh St. & Keyes St.	AM	32	C	32	C	33	C	0.7	0.010	32	C	33	C	0.7	0.010
	PM	36	D	37	D	37	D	0.5	0.008	37	D	37	D	0.5	0.008
5 First St. & Willow St.*	AM	4	A	4	A	4	A	0.0	0.001	4	A	4	A	0.0	0.002
	PM	9	A	8	A	8	A	0.0	0.000	8	A	8	A	0.0	0.000
6 First St. & Second St.	AM	14	B	15	B	16	B	1.2	0.016	15	B	16	B	1.2	0.016
	PM	13	B	14	B	15	B	0.7	0.034	22	C	27	C	5.4	0.046
7 First St. & Alma Ave.*	AM	44	D	48	D	48	D	0.4	0.003	48	D	48	D	0.4	0.003
	PM	43	D	43	D	43	D	0.0	0.001	43	D	43	D	0.0	0.001

Source: Hexagon Transportation Consultants, Inc., September 2007.

Project Traffic Generation

Traffic volumes from the proposed project, and the locations where that traffic is expected to appear, are estimated based on 1) trip generation, 2) trip distribution, and 3) trip assignment. In determining project trip generation, traffic entering and exiting the site is estimated for the AM and PM peak hours. For project trip distribution, an estimate is made of the directions the project trips would travel. For trip assignment, project trips are assigned to specific streets and intersections. Trips generated by the project were determined based on City of San Jose rates and reductions, as shown in Table 5 below. The proposed mixed-use development would generate a total of 1,318 daily trips, with 93 trips occurring during the AM peak hour and 106 trips during the PM peak hour.

Table 6
Trip Generation Estimates

Land Use	Size	Daily Rate	Daily Trips	AM Peak Hour				PM Peak Hour			
				Pk Hr Rate	In	Out	Total	Pk Hr Rate	In	Out	Total
Residential	143	6	858	0.1	30	55	85	0.1	52	28	80
Specialty Retail/ Strip Commercial	11.5 ksf	40	460	0.02	6	2	8	0.09	13	13	26
Total			1,318		35	57	93		65	41	106

Projected peak hour traffic volumes with the project were estimated by adding project traffic to background volumes. Project conditions were evaluated relative to background conditions in order to determine potential impacts. The results of the intersection level of service analysis under project conditions are presented in Table 4. The results show that, measured against the City of San Jose LOS standards, all of the study intersections would operate at an acceptable LOS D or better under project conditions, with or without the couplet conversions.

Site Access and Circulation

The project proposes one entrance driveway from Second Street and one exit driveway along Keyes Street for the at-grade retail parking lot. One driveway from Third Street will provide both ingress and egress to the underground parking garage, with parking restricted to residents and employees only. All driveways will be designed to meet City of San Jose standards.

The driveway along Keyes Street will provide exit only from the one-way drive aisle serving the retail parking lot. Signage should be placed at the driveway restricting inbound traffic. The Second Street driveway is proposed to provide entry only with no exit. The residential driveway along Third Street will provide one inbound land and one outbound lane. Under conditions with Third Street providing one-way northbound traffic flow only, the inbound driveway lane will be provided on the south side while the outbound lane is provided on the north side of the driveway. The orientation of inbound and outbound driveway lanes will need to be reversed upon conversion of Third Street to a two-way street.

Under existing conditions, with Third Street remaining a one-way street, the drive aisle within the residential garage will need to provide one-way clockwise circulation to prevent vehicular conflicts within the garage due to the right inbound lane. Upon conversion of Third Street to a two way street, the drive aisle within the residential garage can provide two-way circulation.

Based on the results of the traffic analysis, the turn restrictions at each of the driveways would have little effect on traffic operations at each driveway due to the fairly low project trips generated.

Parking/Other Issues

It is assumed that some of the project trips would be made by transit, although no deduction was applied to the traffic analysis. Approximately three transit trips are estimated from the project during the peak hours. The project applicant proposes an Eco Pass Program whereby passes will be provided to all tenants annually free-of-charge for use of the County's bus and light rail system.

Parking for the retail uses will be provided in an at-grade parking lot. An underground garage will provide parking for the residents and retail employees. A parking survey was completed by Hexagon Transportation Consultants for the affordable housing component of the project (refer to Appendix D). The project has been designed to comply with the recommended parking ratios for residential uses identified in the Hexagon parking study (refer to table below). The underground parking garage will have 88 parking stalls and the at-grade parking area will contain 40 stalls for a total of 128 spaces. The project will also provide bike parking as required.

Based on the analysis above, the project would result in less-than-significant impacts to transportation facilities.

Project Parking Calculations

RESIDENTIAL	**# Units**	**Parking Ratio**	**# Spaces**
Efficiencies (Developmentally Disabled)	23	0	0
Efficiencies (Chronically Ill)	26	0.55	14.3
Efficiencies (General Population)	83	0.6	49.8
1 Bedroom	6	1.5	9
Less 10% TOD reduction			(0.9)
2 Bedroom	1	1.8	1.8
Less 10% TOD reduction			(0.2)
Residential Spaces Required			74
Residential Spaces Provided			78
RETAIL	**Net Sq Ft**	**Parking Ratio**	**# Spaces**
Retail Center	11,010	200	55
Less 10% TOD reduction			(5.5)
Retail Spaces Required			50
Retail Spaces Provided			50
TOTAL PROVIDED			**128**

Source: Hexagon Transportation Consultants for residential calculations and City of San Jose for retail calculations.
TOD = Transit Oriented Development
Note - The City of San Jose's required parking rates for residential development are based on no. of bedrooms, as follows: 1.0 space for SROs (near transit); 1.5 for studios; 1.5 for 1-bedrooms; 1.8 for 2-bedrooms, 2.0 for 3-bedrooms, and 0.15 for each additional.

P. UTILITIES AND SERVICE SYSTEMS

Setting

Utilities and services are furnished to the project site by the following providers:

- Wastewater Treatment: treatment and disposal provided by the San Jose/Santa Clara Water Pollution Control Plant (WPCP), and lines maintained by the City of San Jose
- Water Service: Santa Jose Water Company
- Storm Drainage: City of San Jose
- Solid Waste: Various
- Natural Gas & Electricity: PG&E

Impacts and Mitigation

Thresholds per CEQA Checklist

ENVIRONMENTAL IMPACTS		Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
16.	UTILITIES AND SERVICE SYSTEMS. Would the project:					
a)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X	1
b)	Require or result in the construction of new water or wastewater treatment facilities of expansion of existing facilities, the construction or which could cause significant environmental effects?				X	1
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X		1
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			X		1
e)	Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X		1
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X		1
g)	Comply with federal, state, and local statutes and regulations related to solid waste?				X	1

Discussion

The proposed residential use would result in an incremental increase in utility usage and water consumption, as well as generation of solid waste, storm water, and wastewater from the development of 139 new residential units and approximately 11,010 square feet of retail space.

The proposed mixed residential/retail development is estimated to create the demand for approximately 27,051 gallons per day (gpd) of water, for potable and irrigation requirements. The project would generate approximately 22,995 gallons per day of wastewater. Solid waste

would also be generated by the project. The proposed project would provide space on the site for trash removal and recycling in the proposed garage.

The proposed mixed retail/residential uses are located on a previously developed site in an urban area that is served by municipal providers. The project would be subject to developer fees to accommodate the incremental demand on services. The project would not significantly impact utility systems, due to the limited size of this infill development.

Storm drainage is specifically addressed under **Hydrology and Water Quality**.

Q. MANDATORY FINDINGS OF SIGNIFICANCE

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact	Source(s)
17. MANDATORY FINDINGS OF SIGNIFICANCE. Does the project:					
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			X		1, 2
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of the past projects, the effects of other current projects, and the effects of probable future projects.			X		1, 2
c) Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?			X		1

The project would not result in significant impacts associated with the CEQA mandatory findings of significance. Based on the analysis provided in this Initial Study, the proposed residential project would not substantially degrade or reduce wildlife species or habitat, impact historical resources, result in significant cumulative impacts, or cause adverse effects on humans.

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Chapter 4. References

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Bay Area Air Quality Management District, *BAAQMD CEQA Guidelines*, 1999.

California Department of Conservation, *Santa Clara County Important Farmlands Map*, 2006.

Federal Emergency Management Agency, *Flood Insurance Rate Map*, City of San Jose, Panel #0603490025D, 2006.

Edward L. Pack Associates, Inc., *Noise Assessment Study for the Planned "South 2nd Gateway Apartments", South Second Street, San Jose*, June 2007, Revised May 2008.

San Jose, City of, *San Jose 2020 General Plan*, as amended through June 2007.

TRC, *Geotechnical Investigation, South 2nd Gateway Apartments, 1140 South 2nd Street, San Jose, California*, October 1, 2007.

WEST, *Phase I Environmental Site Assessment, 1102 to 1150 South Second Street, San Jose, California*, November 2007.

CHECKLIST SOURCES

1. CEQA Guidelines and professional expertise of consultant
2. Project Plan Review
3. San Jose 2020 General Plan
4. Important Farmlands Map, 2006
5. BAAQMD CEQA Guidelines, 1999
6. Geotechnical Investigation, 2007
7. Phase I Assessment, 2007
8. Storm Water Control Plan, 2007
9. Noise Assessment Study, 2008
10. Traffic Analysis, 2007

APPENDIX A

GEOTECHNICAL INVESTIGATION

October 1, 2007
762-11 / 153440

Ms. Shelley Ratay
FIRST COMMUNITY HOUSING
75 East Santa Clara Street, Suite 1250
San Jose, California 95113

RE: GEOTECHNICAL INVESTIGATION
SOUTH 2ND GATEWAY APARTMENTS
1140 SOUTH 2ND STREET
SAN JOSE, CALIFORNIA

Dear Ms. Ratay:

We are pleased to present the results of our geotechnical investigation for the above referenced project. Our report includes a description of the geotechnical and seismic aspects of the site along with our conclusions and geotechnical recommendations for design and construction of the South 2nd Gateway Apartments development.

We refer you to the text of the report for detailed recommendations. If you have any questions concerning our findings, please call and we will be glad to discuss them with you.

Sincerely,

TRC

DRAFT

Minh Q. Le, P.E.
Project Engineer

SML:MQL:mql

Copies: Addressee (4)
Rob Wellington Quigley Architects (via email)
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VerTech Engineering, Inc.
Attn.: Mr. Mike Hubley

Geotechnical Investigation

South 2nd Gateway Apartments

1140 South 2nd Street

San Jose, California

Report No. 762-11 / 153440 has been prepared for:

First Community Housing

75 East Santa Clara Street, Suite 1250, San Jose, California 95113

October 1, 2007

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GEOTECHNICAL INVESTIGATION
SOUTH 2ND GATEWAY APARTMENTS
1140 SOUTH 2ND STREET
SAN JOSE, CALIFORNIA

1.0 INTRODUCTION

In this report, we present the results of our geotechnical investigation for the South 2nd Gateway Apartments project to be located in San Jose, California. The location of the site is shown on the Vicinity Map, Figure 1. The purpose of our investigation was to evaluate the subsurface conditions at the site and to provide geotechnical recommendations for design of the proposed development.

For our use, we received the following:

- A set of architectural plans, prepared by Rob Wellington Quigley Architects, dated August 31, 2007.
- A Phase I Environmental Site Assessment report, prepared by Confidential Compliance Consultants, Inc., dated May 29, 2007.

1.1 Project Description

As presently planned, the project consists of construction of four levels of apartments over at-grade retails and parking over a one-level below grade parking garage. The building will likely consist of wood- or steel-frame construction for the apartments and retails and concrete-frame construction for the below-grade parking garage. The garage finish floor will be about 11 feet below the existing site grade, which corresponds to about elevation 92 feet. Maintenance and meter rooms will be constructed at the below-grade parking level. Associated underground utilities, elevators, driveways and landscapes are also planned.

Structural loads are yet to be finalized. We anticipate structural loads will be representative for this type of construction. Site grading will consist of excavation of the below grading parking garage and subgrade preparation. Due to the presence of high ground water table, dewatering and stabilization of the bottom of the excavation will be required for construction of the below-grade parking garage.

1.2 Scope of Services

Our scope of services was presented in detail in our agreement with you dated August 17, 2007. To accomplish this work, we provided the following services:

- Exploration of subsurface conditions by drilling three borings and retrieving soil samples for observation and laboratory testing. Four cone penetration tests (CPTs) were also advanced.
- Evaluation of the physical and engineering properties of the subsurface soils by visually classifying the samples and performing various laboratory tests on selected samples.

- Correlation of CPT interpretations with visual classification and laboratory testing on samples collected from our borings.
- Engineering analysis to evaluate site earthwork, building foundations, slabs-on-grade and basement walls.
- Preparation of this report to summarize our findings and to present our conclusions and recommendations.

2.0 SITE CONDITIONS

2.1 Exploration Program

Subsurface exploration was performed on September 4 and 6, 2007 using conventional, truck-mounted, hollow-stem auger drilling and CPT equipment to investigate, sample, and log subsurface soils. Three exploratory borings and four CPTs were advanced to depths between 15 to 50 feet below existing site grades. Our borings and CPTs were permitted and backfilled with cement grout in accordance with Santa Clara Valley Water District guidelines. The approximate locations of the borings and CPTs are shown on the Site Plan, Figure 2. A geotechnical cross section through the site, summarizing pertinent geotechnical data, is presented as Figure 3. Logs of our borings and CPTs and details regarding our field investigation are included in Appendix A. Our laboratory tests are discussed in Appendix B.

2.2 Surface

We also performed a brief surface reconnaissance during our site exploration. The site is bordered by South 2nd Street to the southwest, Keyes Street and commercial properties to the northwest, South 3rd Street to the northeast, and residential and commercial properties to the southeast. At the time of our field exploration, the northwest corner of the site is occupied by a fast food restaurant and associated parking; a single-story block building is present on the southeast portion of the site; most of the site is vacant with some remnants of previous demolition, excavation and abandoned dewatering wells. An approximately 7 to 8 foot deep excavation is observed on the western half of the site. Temporary shoring is also observed along South 2nd Street sidewalk and immediately adjacent to the restaurant's building. An approximately 11 foot-high stockpile of soil is observed on the northern portion of the site. Several square concrete piles previously driven at the site was also observed. The depth of the piles is unknown.

Topograhic information, prepared by Sierra West Land Surveying, Inc., indicates site grades vary from approximately Elevation 103 to 105 feet relative to the surrounding area. The excavation on the west side of the site has an elevation of about 95 to 96 feet.

2.3 Subsurface

Three of our seven explorations were performed in the previously excavated area (about 7 to 8 feet below general site grades); therefore, elevation will be referenced in our description for clarity.

Our explorations encountered generally stiff to very stiff clay to depths of about 8½ to 12½ feet (Elevation 91 to 94½ feet). A Plasticity Index (PI) test was performed on this clayey soil sample in Boring EB-2 at a depth of 1½ feet. The test result exhibited a PI of 9 indicating the near surface clayey soils at the site have low plasticity and expansion potential. Below the clay layer,

our explorations encountered loose to medium dense silty and clayey sands, with occasional lenses of medium stiff clay, to depths of about 10½ to 17½ feet (Elevation 92½ to 87½ feet). Below the sand layer, predominantly medium stiff to stiff clays were encountered to the maximum depth explored of 50 feet (Elevation 45 feet).

2.4 Ground Water

Free ground water was encountered during our subsurface exploration at depths between 5 to 13½ feet, which corresponds to about elevation 89½ to 91 feet. All explorations were backfilled immediately after drilling. We also measured the stabilized ground water level in several abandoned dewatering wells and recorded ground water level at approximately elevation 90½ feet (about 12½ to 14½ feet below site grades).

According to the depth to ground water map, prepared by the California Geological Survey (CGS, 2002), historically high ground water levels in the site vicinity are reportedly on the order 8 feet below site grades (Elevation 95 to 97 feet). Fluctuations in the level of the ground water may occur due to variations in rainfall, underground drainage patterns, and other factors not evident at the time measurements were made.

3.0 GEOLOGIC HAZARDS

A brief qualitative evaluation of geologic hazards was made during this investigation. Our comments concerning these hazards are presented below.

3.1 Fault Rupture Hazard

The San Francisco Bay Area is one of the most seismically active regions in the United States. The significant earthquakes that occur in the Bay Area are generally associated with crustal movement along well-defined active fault zones of the San Andreas Fault system, which regionally trend in a northwesterly direction. A Regional Fault Map illustrating known active faults relative to the site is presented in Figure 4. The site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone, known formerly as a Special Studies Zone, nor is it located within a City of San Jose Potential Hazard Zone. As shown on Figure 4, no known surface expression of active faults is believed to cross the site; fault rupture through the site, therefore, is not anticipated.

3.2 Maximum Estimated Ground Shaking

According to Figure 3.5 of the Seismic Hazard Zone Report 058 (CGS, 2002), the magnitude-weighted pseudo-peak acceleration with a 10 percent chance of exceedance in 50 years is approximately 0.5g for the site area. Pseudo-peak ground accelerations have been normalized to a 7.5M_w seismic event and weighted to account for regional seismic activity and fault distances.

3.3 Future Earthquake Probabilities

Although research on earthquake prediction has greatly increased in recent years, seismologists cannot predict when or where an earthquake will occur. The U.S. Geological Survey's Working Group on California Earthquake Probabilities (2003), referred to as WG02, estimates there is a 62 percent chance of at least one magnitude 6.7 or greater earthquake striking the San Francisco Bay region between 2002 and 2031. This result is an important outcome of WG02's work because any major earthquake can cause damage throughout the region.

The 1989 Loma Prieta earthquake demonstrated this potential by causing severe damage in Oakland and San Francisco located more than 50 miles from the fault rupture. Although earthquakes can cause damage at a considerable distance, shaking will be very intense near the fault rupture. Therefore, earthquakes located in urbanized areas of the region have the potential to cause much more damage than the 1989 Loma Prieta earthquake.

3.4 Liquefaction

3.4.1 General Background

The site is located within an area zoned by the State of California as having potential for seismically induced liquefaction hazards (CGS, 2002). During cyclic ground shaking such as earthquakes, cyclically induced stresses may cause increased pore water pressures within the soil matrix and result in liquefaction. Liquefied soil may lose shear strength and lead to large shear deformations and/or flow failure (Youd et al, 2001). Liquefied soil can also settle as pore pressures dissipate following an earthquake. Limited field data is available on this subject; however, settlement on the order of 2 to 3 percent of the thickness of the liquefied zone has been measured in some cases.

Soils most susceptible to liquefaction are loose to moderately dense, saturated non-cohesive soils with poor drainage, such as sands and silts with interbedded or capping layers of relatively low permeability soil.

3.4.2 Analysis and Results

Based on our explorations and the depth to ground water map prepared by the CGS, we judge a design ground water level at 8 feet (Elevation 95 to 97 feet) below the existing site grades is reasonable for our liquefaction analyses. As discussed in the "Subsurface" section, several sand layers were encountered below the recommended design ground water depth. These layers were evaluated to assess liquefaction potential and the effects liquefaction may have on the proposed building.

Our liquefaction analyses followed the methods presented by the 1998 NCEER Workshops in accordance with guidelines set forth in the California Division of Mines and Geology Special Publication 117 (CDMG, 1997). The NCEER methods for CPT analyses update simplified procedures presented by Seed and Idriss (1971).

In broad terms, these methods are used to calculate a factor of safety against liquefaction triggering by comparing the resistance of the soil to cyclic shaking to the seismic demand that can be caused during seismic events.

The resistance to cyclic shaking is quantified by the Cyclic Resistance Ratio (CRR), which is a function of soil density, layer depth, ground water depth, earthquake magnitude, and soil behavior. CRR calculations are based on CPT tip resistance. The CPT tip pressures were corrected for the overburden and fines content. The CPT method utilizes the soil behavior type index (I_C) and the exponential factor "n" applied to the Normalized Cone Resistance "Q" to evaluate how plastic the soil behaves.

The Cyclic Stress Ratio (CSR) is used to quantify the stresses that are anticipated to develop during cyclic shaking. The formula for CSR is shown below:

$$CSR = 0.65\ (a_{max}/g)(\sigma_{vo}/\sigma'_{vo})r_d$$

Where a_{max} is the peak horizontal acceleration at the ground surface generated by an earthquake, g is the acceleration of gravity, σ_{vo} and σ'_{vo} are total and effective overburden stresses, respectively, and r_d is a stress reduction coefficient. We use a pseudo-peak horizontal acceleration of 0.5g, corresponding to a 10 percent chance of exceedance in 50 years, for our liquefaction analyses.

Soils that have greater than 35 percent of plastic fines, or an I_C greater than 2.6, or a corrected CPT tip resistance greater than 160 tons per square foot (tsf) are considered either too plastic or too dense to liquefy. Such soil layers have been screened out during our analyses and are not presented below. Since the proposed excavation will be greater than 11 feet below the existing site grades, sand layers above this depth were also screened out and are not presented.

The factor of safety (FS) against liquefaction can be expressed as the ratio of the CRR to CSR. If the FS for a soil layer is less than 1.0, the soil layer is considered liquefiable during a moderate to large seismic event.

$$FS = CRR/CSR$$

A summary of our CPT analyses is presented in the table below. An analysis was not performed on the SPT data collected in hollow stem borings since the borings were drilled adjacent to the CPTs for soil correlation purposes only.

Table 1. Results of Liquefaction Analyses – CPT Method

CPT Number	Depth to Top of Sand Layer in Elevation (feet)	Layer Thickness (feet)	I_C	$*q_{C1N-CS}$	Factor of Safety	Estimated Total Settlement (in.)	Estimated Differential Settlement (in.)
CPT-1	92.5	2.0	2.2	75	0.3	0.7	0.3
	88	0.6	2.2	62	0.2	0.3	0.2
					Total =	**1.0**	**0.5**
CPT-2	91	2.0	2.3	58	0.3	0.8	0.4
					Total =	**0.8**	**0.4**
CPT-3	91	2.1	2.4	60	0.2	0.9	0.4
* CPT tip pressure corrected for overburden and fines content					**Total =**	**0.9**	**0.4**

Our analyses indicate that several sand layers can theoretically liquefy resulting in about ¾ to 1 inch of total settlement. Volumetric change and settlement were estimated using the Ishihara and Yoshimine (1990) method. As discussed in the Southern California Earthquake Center report, differential movement for level ground deep soil sites will be on the order of half the total estimated settlement, which yields about ½-inch or less.

3.4.3 Potential for Ground Rupture/Sand Boils

The methods of analysis used to estimate the total settlement assume that there is no possibility of surface ground rupture. In order for liquefaction induced sand boils or fissures to occur, the pore water pressure induced within the liquefied strata must exert a large enough force to break through the surface layer. There is at least 8 feet of non-liquefiable material overlying the relatively thin potential liquefiable layers at the site. Based on the work by Youd and Garris

(1995), there is adequate non-liquefiable material capping the site to prevent surface ground rupture; however, liquefiable soil, as shown on Figure 3, is present immediately below most of the proposed foundation area; therefore, mitigation of the liquefiable soil to approximately elevation 87½ feet is recommended to prevent foundation failure during a seismic event. Detailed recommendations are presented in the following sections of this report.

3.5 Seismically-Induced Dry Sand Densification

If near-surface soils vary in composition both vertically and laterally, strong earthquake shaking can cause non-uniform settlement of cohesionless soil strata. This results in movement of the near-surface soils. Our explorations did not encounter any loose cohesionless soils above the design ground water elevation; therefore, we judge the probability of significant differential settlement of non-saturated sand layers at the site to be low. Liquefaction-induced settlement is discussed in the "Liquefaction" section above.

3.6 Lateral Spreading

Lateral spreading typically occurs as a form of horizontal displacement of relatively flat-lying alluvial material toward an open or "free" face such as an open body of water, channel or excavation. Since there are no creeks or open bodies of water within an appropriate distance from the site for lateral spreading to occur, we judge the probability of lateral spreading occurring at the site during a seismic event to be low.

4.0 SOIL CORROSION EVALUATION

To evaluate the corrosion potential of the subsurface soils at the site, we submitted three samples collected during our subsurface investigation to an analytical laboratory for pH, resistivity, soluble sulfate and chloride content testing. The results of these tests are summarized below in Table 2.

Table 2. Results of Corrosivity Testing

Sample No.	Depth (feet)	Depth in Elevation (feet)	Chloride (mg/kg)	Sulfate (mg/kg)	pH	Resistivity* (ohm-cm)	Estimated Corrosivity Based on Resistivity	Estimated Corrosivity Based on Sulfates
EB-1	3½	92½	73	173	8.4	1,653	Corrosive	Negligible
EB-2	3½	99½	3	<5	8.0	4,501	Moderate	Negligible
EB-2	6	96½	13	66	8.1	3,418	Moderate	Negligible

Note: mg/kg = milligrams per kilogram = parts per million (ppm)
*Resistivity measured at 100% saturation

Many factors can affect the corrosion potential of soil including soil moisture content, resistivity, permeability and pH, as well as chloride and sulfate concentration. In general, soil resistivity, which is a measure of how easily electrical current flows through soils, is the most influential factor. Based on the findings of studies presented in ASTM STP 1013 titled "Effects of Soil Characteristics on Corrosion" by William J. Ellis (1978), the approximate relationship between soil corrosiveness was developed as shown in Table 3 below.

Table 3. Relationship Between Soil Resistivity and Soil Corrosivity

Soil Resistivity (ohm-cm)	Classification of Soil Corrosiveness
0 to 500	Very Severe Corrosion
501 to 2,000	Corrosive
2,001 to 8,000	Moderately Corrosive
8,001 to 32,000	Mildly Corrosive
>32,000	Progressively Less Corrosive

Chloride and sulfate ion concentrations and pH appear to play secondary roles in affecting corrosion potential. High chloride levels tend to reduce soil resistivity and break down otherwise protective surface deposits, which may result in corrosion of buried metallic improvements or reinforced concrete structures. Sulfate ions in the soil can lower the soil resistivity and can be highly aggressive to Portland cement concrete (PCC) by combining chemically with certain constituents of the concrete, principally tricalcium aluminate. This reaction is accompanied by expansion and eventual disruption of the concrete matrix. Soils containing high sulfate content could also cause corrosion of the reinforcing steel in concrete. Section 4.3 of the American Concrete Institute (ACI) provides requirements for concrete exposed to sulfate-containing solutions as summarized in Table 4.

Table 4. Relationship Between Sulfate Concentration and Sulfate Exposure

Water-Soluble Sulfate (SO_4) in soil, ppm	Sulfate Exposure
0 to 1,000	Negligible
1,000 to 2,000	Moderate[1]
2,000 to 20,000	Severe
over 20,000	Very Severe

1= seawater

Acidity is an important factor of soil corrosivity; the lower the pH (the more acidic the environment), the higher the soil corrosivity with respect to buried metallic structures. As soil pH increases above 7 (the neutral value), the soil is increasingly more alkaline and less corrosive to buried steel structures due to protective surface films which form on steel in high pH environments. A pH between 5 and 8.5 is generally considered relatively passive from a corrosion standpoint.

As shown in Table 2, soil resistivity results range from 1,653 to 4,501 ohm-centimeters. Based on these test results and resistivity correlations presented in Table 3, the corrosion potential to buried metallic improvements may be characterized as moderately corrosive to corrosive. If desired, a corrosion engineer may be consulted to provide recommendations for corrosion protection of underground metallic pipelines proposed for the project.

Based on the test results, our engineering experience, and relationship between sulfate concentration and sulfate exposure as presented in Table 4, it is our opinion that sulfate exposure to PCC is considered negligible for the native subsurface materials sampled.

5.0 CONCLUSIONS AND DEVELOPMENT CONSIDERATIONS

5.1 Conclusions

From a geotechnical engineering viewpoint, the proposed development may be constructed as planned, in our opinion, provided the design and construction are performed in accordance with the recommendations presented in this report.

The primary geotechnical concerns at the site are as follows:

- Liquefiable soils immediately below the proposed foundation
- Excavation of the proposed basement in close proximity to adjacent buildings and streets
- Shallow ground water
- The presence of previously driven concrete piles

We have presented typical approaches to manage these potential concerns associated with the long-term performance of the development in the following sections.

5.1.1 Liquefiable Soils Immediately Below Proposed Foundation

As discussed in the "Liquefaction" section, several sand layers encountered in our explorations may theoretically liquefy during strong ground shaking, which results in settlements and temporarily loss of foundation support. Since liquefiable soil is present immediately below most of the proposed foundation area, mitigation of the liquefiable soil to at least elevation 88 feet is recommended to prevent foundation failure during strong ground shaking. Mitigation of the liquefiable soil below the proposed basement access ramp off of South 3rd Street is not required; however, liquefaction-induced settlement up to 1-inch across the ramp area is possible following strong ground shaking. Alternatives of mitigating the liquefiable soil below the foundation area are presented in the "Earthwork" section of this report.

5.1.2 Excavation of Proposed Basement in Close Proximity to Buildings and Streets

Due to construction of the proposed below-grade parking garage extending to near the property lines, consideration should be given to temporarily shore the excavation. The shoring system and permanent basement walls may need to be designed for surcharge loads. Underpinning the adjacent foundations may be necessary if surcharge loads are excessive or if the possibility of foundation movement is not desired. Detailed recommendations are presented in the following sections of this report.

5.1.3 Shallow Ground Water

Historically high ground water in the site vicinity is reportedly on the order of 8 feet (CGS, 2002); therefore, we recommend a design ground water elevation of 97 feet (about 6 to 8 feet below site grades) be used for design of the project. Since the garage finished floor will be at about 11 feet below grade, below the design ground water depth, and permanent ground water dewatering is not likely, we judge a mat foundation is appropriate for this project. The mat foundation and basement walls should be designed to resist hydrostatic pressure up to the design ground water elevation. Detailed recommendations are presented in the following sections of this report.

Based on our explorations and high ground water table at the site, excavation of the proposed below-grade parking garage will encounter wet and unstable subgrade soils. Dewatering and stabilizing the bottom of the excavation will be required. The dewatering plan should consider the effects on adjacent structures with respect to drawing down the water table. The contractor should forward his dewatering plan to us for review prior to construction.

As discussed in Section 5.1.1, the bottom of the excavation will be mitigated to approximately elevation 87½ feet to prevent foundation failure during strong ground shaking; this should provide a relatively stable working platform at the bottom of the excavation.

5.1.4 Previously Driven Concrete Piles

Concrete piles previously driven at the site should be cut off at least 2 feet below the bottom of the proposed foundation elevation. If the piles are to be removed, the holes should be backfilled with lean concrete.

5.2 Plans, Specifications, and Construction Review

We recommend that our firm perform a plan review of the geotechnical aspects of the project design for general conformance with our recommendations. Since subsurface materials encountered in the relatively small diameter and widely spaced explorations may vary from other subsurface materials on the site, we also recommend that a representative of our firm observe and test the geotechnical aspects of the project during construction. This will allow us to form an opinion about the general conformance of the project plans and construction with our recommendations. In addition, our observations during construction will enable us to note subsurface conditions that may vary from the conditions encountered during our investigation, and if needed, provide supplemental recommendations. For the above reasons, our geotechnical recommendations are contingent upon our firm providing geotechnical observation and testing services during construction.

6.0 EARTHWORK

6.1 Clearing and Site Preparation

The site should be cleared of all surface and subsurface improvements to be removed and deleterious materials including existing building foundations, slabs, fills, pavements and debris. Abandonment of existing buried utilities is discussed below. Excavations extending below the planned finished site grades should be cleaned and backfilled with suitable material compacted as recommended in the "Compaction" section of this report. We recommend that backfilling of holes or pits resulting from demolition and removal of buried structures be carried out under our observation and that backfill be tested during placement.

6.2 Abandoned Utilities

Abandoned utilities within the proposed building area should be removed in their entirety. It may be feasible to abandon (in-place) underground utilities within the proposed building area provided the utility does not conflict with new improvements, is completely grouted, and previous fills associated with the utility do not pose a risk to the proposed structure. Existing underground utilities outside the proposed building area may be removed or abandoned in-place by grouting or plugging the ends with concrete. The decision to abandon in-place versus removal should be based on the level of risk associated with the particular utility line.

Fills associated with underground utilities abandoned in-place may have an increased potential for settlement, and partially grouted or plugged pipelines will have a potential risk of collapse that may result in ground settlement, soil piping and leakage of pipeline constituents. The potential risks are relatively low for small diameter pipes (4 inches or less) and increasingly higher with increasing diameter.

6.3 Removal of Potentially Liquefiable Soil Below Foundation Area

To reduce the potential of foundation failure during strong ground shaking and to provide a stable subgrade at the bottom of the excavation, we recommend that the potentially liquefiable soil below the foundation area be removed to approximately elevation 87½ feet and replaced with 2- to 3-inch size crushed rock over a stabilization geotextile (Tensar BX-1200 or equivalent). The crushed rock should be placed in 12-inch lifts and consolidated in-place using compaction equipment. Alternatively, the liquefiable soil may be lime-treated as recommended in the section below.

6.4 Chemical-Treatment

As an alternative to the removal scheme discussed above, the upper 18 inches of the bottom of excavation can be chemically-treated. The bottom of the excavation can be treated with quicklime (CaO), cement or fly ash, as appropriate. The treated soils should be compacted to at least 90 percent relative compaction (ASTM D1557). For the purpose of cost estimates, treatment should be assumed to be 4 percent by weight, based on a unit weight of 110 pounds per cubic foot. A final percentage should be determined prior to construction using the existing soils and a sample of the actual material to be used.

The soil treatment should be placed and mixed in accordance with Caltrans Standard Specifications, Chapter 24. We recommend mixing at least twice and that at least one mix occurs after the first mix has been allowed to cure overnight. Once the treated materials have dried back and broken down sufficiently, placement and compaction of the approved treated materials may proceed. Compaction test results for treated soil will be available the day following testing because moisture contents of treated soil must be determined by oven drying. The surface of the treated section should be firm and unyielding under the weight of construction equipment.

Finished grading will need to be completed after the chemical-treatment contractor has finished mixing and compacting the soils. The original grading contractor typically completes the finished grading work. Treated materials have high pH and should be avoided in future landscape areas.

6.5 Subgrade Preparation

The subgrade for the foundation should generally be cut to the desired grades, including the thickness for subgrade stabilization. Rubber-tire equipment should not be allowed to operate on the exposed subgrade due to the potential for de-stabilization and pumping. Proof-rolling or compaction of the bottom of the sub-excavation is not required or recommended. The use of concrete rat slabs may be desired to protect the subgrade as a surface to apply the waterproofing.

Exposed at-grade surface soils in those areas to receive fill, slabs-on-grade, or pavements should be scarified to a depth of 6 inches, moisture conditioned or aerated, and compacted in accordance with the recommendations for fill presented in the "Compaction" section. The finished compacted subgrade should be firm and non-yielding under the weight of compaction equipment.

6.6 Material for Fill

All on-site soils having an organic content of less than 3 percent by weight are suitable for use as fill at the site. In general, fill material should not contain rocks or lumps larger than 6 inches in greatest dimension, with 15 percent or less larger than 2½ inches in the greatest dimension.

Import fill should be inorganic, have a Plasticity Index of 15 or less and should have sufficient binder to reduce the potential for sidewall caving of foundation and utility trenches. Samples of the proposed import fill should be submitted to us at least 10 days prior to delivery to the site to allow for visual review and laboratory testing. This will allow us to evaluate the general conformance of the import fill with our recommendations.

Consideration should also be given to the environmental characteristics and corrosion potential of any imported fill. Suitable documentation should be provided for import material. In addition, it may be appropriate to perform laboratory testing of the environmental characteristics and corrosion potential of imported materials.

6.7 Compaction

All fill as well as scarified surface soils in those areas to receive fill or slabs-on-grade should be compacted to at least 90 percent relative compaction as determined by ASTM Test Designation D1557, latest edition. With the exception of crushed rock, fill should be placed in lifts no greater than 8 inches in uncompacted thickness at a moisture content near the laboratory optimum. Each successive lift should be firm and non-yielding under the weight of construction equipment.

In pavement areas, the upper 6 inches of subgrade and full depth of aggregate base should be compacted to at least 95 percent relative compaction (ASTM D1557, latest edition). Aggregate base and all import soils should be compacted at a moisture content near the laboratory optimum.

6.8 Wet Weather Conditions

Earthwork such as fill placement and trench backfill may be difficult during wet weather, especially for fill materials with a significant amount of clay. If the moisture content in the fill increases significantly above the optimum, the soils will become soft, yielding, and difficult to compact. Therefore, we recommend that earthwork be performed during periods of suitable weather conditions such as the "summer" construction season.

6.9 Trench Backfill

Bedding and pipe embedment materials to be used around underground utility pipes should be well graded sand or gravel conforming to the pipe manufacturer's recommendations and should be placed and compacted in accordance with project specifications, local requirements or governing jurisdiction. General fill to be used above pipe embedment materials should be placed and compacted in accordance with local requirements or the recommendations contained in this section, whichever is more stringent.

On-site soils may be used as general fill above pipe embedment materials provided they meet the requirements of the "Material for Fill" section of this report. General fill should be placed in lifts not exceeding 8 inches in uncompacted thickness and should be compacted to at least 90 percent relative compaction (ASTM D1557, latest edition) by mechanical means only. Water jetting of trench backfill should not be allowed.

If ground water is encountered in utility trench excavations, crushed rock may be used as pipe bedding (if approved by the local jurisdiction) to provide a stable working platform for utility installation and backfill. The crushed rock should be compacted by vibratory methods until no further volume reduction is observed.

6.10 Temporary Slopes and Trench Excavations

The contractor should be responsible for all temporary slopes and trenches excavated at the site and design of any required temporary shoring. Shoring, bracing, and benching should be performed by the contractor in accordance with the strictest governing safety standards.

6.11 Temporary Shoring Support System

Excavation up to about 15 feet is anticipated for construction of the below grade parking garage and to mitigate the liquefiable soil immediately below the foundation area. The excavation could be temporarily supported by several methods including tiebacks, soil nailing, braced shoring, or other methods. Where shoring is required, restrained shoring will most likely be necessary to limit deflections and disruption to adjacent buildings and improvements. The choice of shoring method should be left to the contractor's judgment since economic considerations and/or the individual contractor's construction experience may determine which method is more economical and/or appropriate. However, other factors such as the location of nearby utilities and encroachment on adjacent properties may influence the choice of support.

The temporary shoring should be designed for additional surcharges due to adjacent loads such as construction vehicles, street traffic and adjacent buildings. To prevent excessive surcharging of the walls, we recommend that heavy loads such as construction equipment and stockpiles of materials be kept at least 15 feet from the top of the excavation. If this is not possible, the shoring must be designed to resist the additional anticipated lateral loads. Shoring systems should be designed with sufficient rigidity to prevent detrimental lateral displacements. Minimum parameters/loads for design of a temporary shoring system are given in Table 5.

Table 5. Temporary Shoring System Design Parameter

Design Parameter	Design Value (psf)
Minimum Lateral Wall Surcharge[1]	120 psf
Earth Pressure – Cantilever Wall	40 pcf
Earth Pressure – Restrained Wall[2] From ground surface to H/4 (ft)	Increase from 0 to 36H psf
Earth Pressure – Restrained Wall Below H/4 (ft)	Uniform pressure of 36H psf
Passive Pressure[3]	Uniform pressure of 1,200 psf

Note: 1. For the upper 5 feet (minimum for incidental loading)
2. Where H equals height of excavation
3. Can assume to act over 2 times the diameter of soldier piles, neglecting the upper foot

To limit potential movements of the shoring system, the shoring designer and contractor should consider several design and construction issues. For the movements of shoring to be reduced, the designer will have to provide for a uniform and timely mobilization of the soil pressures. Tiebacks or interior bracing should be loaded to the design loads prior to excavation of the

adjacent soil so that load induced strains in the retaining system will not result in the system moving toward the excavation. In addition, a relatively stiff shoring system should be designed to limit deflections under loading. In general, we recommend designing a shoring system to deflect less than about ½-inch.

In addition, ground subsidence and deflections can be caused by other factors, such as voids created behind the shoring system by over-excavation, soil sloughing, erosion of sand or silt layers due to perched water, etc. All voids behind the shoring system should be filled as soon as feasible by grouting to minimize potential problems during installation of the shoring system.

Since we drilled our borings with hollow-stem auger drilling equipment, we were not able to evaluate the potential for caving of site soils, which may become a factor during soldier pile and/or tieback installation. The contractor is responsible for evaluating excavation difficulties prior to construction.

In conjunction with the shoring installation, a monitoring program should be set up and carried out by the contractor to evaluate the potential effects of the construction on adjacent buildings and other improvements such as streets, sidewalks and utilities. As a minimum, we recommend horizontal and vertical surveying of reference points on the shoring and on adjacent streets and buildings in addition to an initial crack survey. We also recommend that all supported and/or sensitive utilities be located and monitored by the contractor. Reference points should be set up and read prior to the start of construction activities. Points should also be set on the shoring as soon as initial installations are made. Alternatively, inclinometers could be installed by the contractor at critical locations for a more detailed monitoring of shoring deflections. Surveys should be made at least once a week and more frequently during critical construction activities or if significant deflections are observed or noted. TRC can provide inclinometer materials and has the equipment and software to read and analyze the data quickly.

This report is intended for use by the design team. The Contractor may perform additional subsurface exploration and/or geotechnical studies as they deem necessary for the chosen shoring system. The Contractor is also responsible for site safety and the means and methods of construction including temporary shoring. Temporary shoring must be designed by a licensed California Civil or Structural Engineer. Prior to construction, we recommend that the contractor forward his plan for the support system to the structural engineer and geotechnical engineer for preconstruction review.

6.12 Temporary Dewatering

As previously discussed, measured ground water elevations and historic high ground water levels are above the planned excavation depth; therefore, temporary dewatering will be necessary during construction. Temporary dewatering for construction should be the responsibility of the contractor. The selection of equipment and methods of dewatering should be left up to the contractor. Due to the variable nature of the subsurface conditions at the site, the contractor should aware that modifications to the dewatering system, such as adding well points, may be required during construction depending on the conditions encountered.

We recommend that any dewatering of the site be carried out in such a manner as to maintain the ground water at least 3 feet below the bottom of the mass excavation. The contractor should design a system to achieve this criterion. Should dewatering be temporarily shut down, it could have considerable detrimental effects on the excavations including flooding, destabilization of the bottom of the excavation, shoring failures, etc. Therefore, we recommend the dewatering

contractor provides a backup power system in case of loss of power or other redundancies, as deemed necessary.

In addition, drawdown of ground water during dewatering can cause subsidence outside of the excavation area. The contractor should evaluate the potential impact of ground water drawdown to adjacent buildings and improvements.

Special considerations may be required prior to discharge of ground water from dewatering activities depending on the quality of the ground water and environmental impacts at the site or at nearby locations. These requirements may include storage and testing under permit prior to discharge. Impacted ground water may require discharge at an off-site facility.

6.13 Surface Drainage

Positive surface water drainage gradients, at least 1 percent in landscape areas and 0.5 percent in pavement areas, should be provided adjacent to the building to direct surface water away from foundations and slabs toward suitable discharge facilities. Ponding of surface water should not be allowed on or adjacent to the building, slabs-on-grade or pavements. Roof runoff should be directed away from foundation and slabs-on-grade. Downspouts may discharge onto splash-blocks provided the area is covered with concrete slabs or asphalt concrete pavements.

6.14 Construction Observation

A representative from our company should observe and test the geotechnical aspects of the grading and earthwork for general conformance with our recommendations including site preparation, selection of fill materials and the placement and compaction of fill. To facilitate your construction schedule, we request sufficient notification (48 hours) for site visits. The project plans and specifications should incorporate all recommendations contained in the text of this report.

7.0 FOUNDATIONS

Due to the presence of high ground water table and subsurface soil conditions at the site, we judge that a mat foundation is most feasible for this project. Provided that the site is prepared in accordance with the "Earthwork" section of the report, the proposed building may be supported on a mat foundation as discussed in the sections below.

7.1 2007 California Building Code (CBC) Site Seismic Coefficients

Chapter 16 of the 2007 CBC outlines the procedure for seismic design of structures. Based on our explorations and review of the alluvium thickness map of Santa Clara County prepared by Rogers and Williams (1974), the site is underlain by stiff soils extending to depths on the order of 500 feet, which corresponds to a soil profile type D generally described as a stiff soil profile with average Standard Penetration Test (N) values in the range of 15 to 50 blows per foot. Based on the above information and local seismic sources, the site may be characterized for design using the information in Table 6 below.

Table 6. 2007 CBC Site Class and Site Seismic Coefficients

Categorization/Coefficient	Design Value
Site Class (Table 1613.5.2)	D
Mapped Spectral Response Acceleration for Short Period, S_s (Figure 1613.5(3))	1.5
Mapped Spectral Response Acceleration at 1-Second Period, S_1 (Figure 1613.5(4))	0.6
Value of Site Coefficient, F_a (Table 1613.5.3(1))	1.0
Value of Site Coefficient, F_v (Table 1613.5.3(2))	1.5
S_{MS} (Equation 16-37)	1.5
S_{M1} (Equation 16-38)	0.9

7.2 Reinforced Mat Foundation

The proposed building may be supported on a conventionally reinforced mat foundation. Based on the subsurface conditions, we recommend the mat be designed for an average allowable bearing pressure of 1,000 pounds per square foot (psf) for dead plus sustained live loads with maximum localized bearing pressures of 1,800 psf at column or wall loads. Allowable bearing pressures may be increased by one-third for all loads including wind or seismic. These allowable bearing pressures are net values; the weight of the mat can be neglected for design purposes.

All mats should be reinforced with top and bottom steel, as appropriate, to provide structural continuity and to permit spanning of local irregularities. These recommendations may be revised depending on the particular design method selected by the structural engineer. It is essential that we observe the mat foundation pad prior to placement of reinforcing steel.

Based on the assumed mat pressure, we estimate the total settlement will be about ½-inch due to static loading and about ¼-inch of differential movement from the center to the edge and corner of the mat.

As discussed in the "Earthwork" section, if the liquefiable soil below the mat foundation is removed and replaced with crushed rock over stabilization geotextile, liquefaction-induced settlement is not expected below the mat foundation. However, if only the upper 18 inches of the liquefiable soil is lime-treated, the mat foundation should be designed to accommodate an addition ¼-inch and less than ¼-inch of total and differential settlements from the center to the edge and corner of the mat following strong ground shaking.

7.3 Modulus of Subgrade Reaction

For structural design of the mat, we recommend using a subgrade modulus that models the soil response under building loads. In developing the appropriate modulus of subgrade reaction (referred to as the "subgrade modulus"), we considered the varying soil conditions and stress distribution for the planned building layout. We recommend the following modulus of subgrade values be used for design.

Table 7. Modulus of Subgrade Reaction Values

Foundation Type		Modulus of Subgrade Reaction
Mat Foundation	center of mat	15 pci
	outer 5 feet	30 pci

We would be pleased to provide supplemental consultation in refining the soil subgrade modulus values, if desired. In order to proceed with further analysis, we would need the output from the first iteration of the SAFE analysis or other finite element analysis of the mat.

7.4 Hydrostatic Uplift

We recommend that the mat be designed to withstand hydrostatic uplift pressures to a design ground elevation of 97 feet (corresponding to 6 to 8 feet below site grades). We also recommend that a water-proof barrier, membrane or other water-proofing system be placed beneath the mat and up the basement walls that extend below the design water level. A rat slab could be poured over the subgrade or rock stabilization layer to protect the water-proofing as reinforcing steel is placed. The basement walls should also be designed to resist hydrostatic pressure up to Elevation 97 feet. Detailed recommendations for the basement walls are presented below.

7.5 Lateral Loads

Lateral loads may be resisted by friction between the foundation and the supporting subgrade. A maximum allowable coefficient of friction of 0.3 may be used for design. In addition, lateral resistance may be provided by passive pressures acting against foundations poured neat against competent soil. We recommend that an allowable passive soil resistance based on an equivalent fluid pressure of 300 pounds per cubic foot be used in design.

8.0 WATERPROOFING

As the building has one level below grade, the mat, all construction joints and basement walls should be waterproofed to limit moisture infiltration. We recommend that a waterproof specialist design the waterproofing system, including the under-mat, waterstops and other waterproofing measures at construction joints, and all below-grade basement walls. The use of drainage systems above historic high ground water levels and designing for hydrostatic pressures are discussed in subsequent report sections.

9.0 BASEMENT WALLS

9.1 Lateral Earth Pressures

The basement walls should be designed to resist lateral earth pressures from adjoining natural materials, backfill, and surcharge loads. Provided that adequate drainage is provided as recommended below, we recommend that walls restrained from movement at the top be designed to resist an equivalent fluid pressure of 45 pounds per cubic foot (pcf) plus a uniform pressure of 8H pounds per square foot, where H is the distance in feet between the bottom of the footing and the top of the wall. Restrained walls should also be designed to resist an additional uniform pressure equivalent to one-half of any surcharge loads applied at the surface, such as vehicular loads and adjacent foundations. Any unrestrained retaining walls with adequate drainage should be designed to resist an equivalent fluid pressure of 45 pcf plus one-third of any surcharge loads.

The above lateral earth pressures assume level backfill conditions and sufficient drainage behind the walls to prevent build-up of hydrostatic pressure from surface water infiltration and/or ground water. The walls should be designed as undrained below elevation 97 feet and should have an equivalent fluid pressure of 40 pcf added to the values recommended above for both restrained and unrestrained walls. Provided a wall drainage system as described below is included above elevation 97 feet, the walls above elevation 97 feet may be designed based on drained earth pressures. Damp-proofing and/or water-proofing of the walls should be included in areas where wall moisture and efflorescence would be undesirable.

9.2 Drainage

The basement walls should be designed to withstand hydrostatic pressures up to elevation 97 feet, which corresponds to 6 to 8 feet below the existing sidewalk grade. Passive wall drainage should also be provided above the design ground water elevation of 97 feet.

The wall drainage system should consist of a 4-inch minimum diameter perforated pipe placed at elevation 97 feet (perforations placed downward). The pipe should be bedded and backfilled with Class 2 Permeable Material per Caltrans Standard Specifications, latest edition. The permeable backfill should extend at least 12 inches out from the wall and to within 2 feet of outside finished grade. Alternatively, ½-inch to ¾-inch crushed rock may be used in place of the Class 2 Permeable Material provided the crushed rock and pipe are enclosed in filter fabric, such as Mirafi 140N or equivalent. The upper 2 feet of wall backfill should consist of relatively low permeability compacted on-site clayey soil. The subdrain outlet should be connected to a free-draining outlet or sump.

Miradrain, Geotech Drainage Panels, or Enkadrain drainage matting may be used for wall drainage as an alternative to the Class 2 Permeable Material or drain rock backfill. The drainage panel should be connected to the perforated pipe, or thickened horizontal drain mat section at the base of the wall, or to other closed or through-wall system.

9.3 Backfill

Backfill placed behind the walls should be compacted to at least 90 percent relative compaction using light compaction equipment. If heavy compaction equipment is used, or if undesirable wall deflections occur, the walls should be temporarily braced.

9.4 Foundation

Retaining walls may be supported on the mat foundation designed in accordance with the recommendations presented in the "Reinforced Mat Foundation" section of this report. Lateral load resistance for the walls may be developed in accordance with the recommendations presented in the "Lateral Loads" section.

10.0 CONCRETE SLABS-ON-GRADE

10.1 Access Ramp Slab

We recommend that the access ramp concrete slab off of South 3rd Street be at least 5 inches and be supported on at least 6 inches of Class 2 aggregate base compacted to at least 95 percent relative compaction. If heavy traffic loading is anticipated, the ramp slab should be at least 6 inches thick. Our design is based on a 28-day unconfined compressive strength for concrete of at least 3,500 pounds per square inch. In addition, our design assumes that

pavements are restrained laterally by a concrete shoulder or curb. We recommend that adequate construction and control joints be used in design of the slab to control inherent cracking. Adequate slab reinforcement should be provided to satisfy the anticipated use and loading requirements.

10.2 Exterior Concrete Flatwork and Sidewalks

Due to the low expansion potential of near surface soils, private exterior concrete flatwork and sidewalks may be supported directly on native soils. The subgrade should be compacted to at least 90 percent relative compaction. We recommend that exterior slabs be isolated from the adjacent basement walls and that adequate construction and control joints be used in design of the concrete slabs to control cracking inherent in concrete construction.

Sidewalks in the public right-of-way should be constructed in accordance with the City of San Jose requirements. The subgrade and aggregate base should be prepared and compacted in accordance with the recommendations presented in the "Earthwork" section of this report. If sidewalks are subject to wheel loads, the recommendations presented in the "Access Ramp Slab" section should be followed.

10.3 Aggregate Base and Subgrade

Aggregate base should conform to and be placed in accordance with the requirements of Caltrans Standard Specifications, latest edition, except that ASTM Test Designation D1557 is used to determine the relative compaction of the aggregate base. Pavement subgrade should be prepared and compacted as described in the "Earthwork" section of this report.

11.0 LIMITATIONS

This report has been prepared for the sole use of First Community Housing, specifically for design of the South 2nd Gateway Apartments development in San Jose, California. The opinions, conclusions and recommendations presented in this report have been formulated in accordance with accepted geotechnical engineering practices that exist in the San Francisco Bay Area at the time this report was written. No warranty, expressed or implied, is made or should be inferred.

The opinions, conclusions and recommendations contained in this report are based upon the information obtained from our investigation, which includes data from widely separated discrete locations, visual observations from our site reconnaissance, and review of other geotechnical data provided to us, along with local experience and engineering judgment. The recommendations presented in this report are based on the assumption that soil and geologic conditions at or between borings do not deviate substantially from those encountered or extrapolated from the information collected during our investigation. We are not responsible for the data presented by others.

We should be retained to review the geotechnical aspects of the final plans and specifications for conformance with our recommendations. The recommendations provided in this report are based on the assumption that we will be retained to provide observation and testing services during construction to confirm that conditions are similar to that assumed for design and to form an opinion as to whether the work has been performed in accordance with the project plans and specifications. If we are not retained for these services, TRC cannot assume any responsibility for any potential claims that may arise during or after construction as a result of misuse or misinterpretation of TRC's report by others. Furthermore, TRC will cease to be the Geotechnical-

Engineer-of-Record if we are not retained for these services and/or at the time another consultant is retained for follow up service to this report.

The opinions presented in this report are valid as of the present date for the property evaluated. Changes in the condition of the property will likely occur with the passage of time due to natural processes and/or the works of man. In addition, changes in applicable standards of practice can occur as a result of legislation and/or the broadening of knowledge. Furthermore, geotechnical issues may arise that were not apparent at the time of our investigation. Accordingly, the opinions presented in this report may be invalidated, wholly or partially, by changes outside of our control. Therefore, this report is subject to review and should not be relied upon after a period of three years, nor should it be used, or is it applicable, for any other properties.

12.0 REFERENCES

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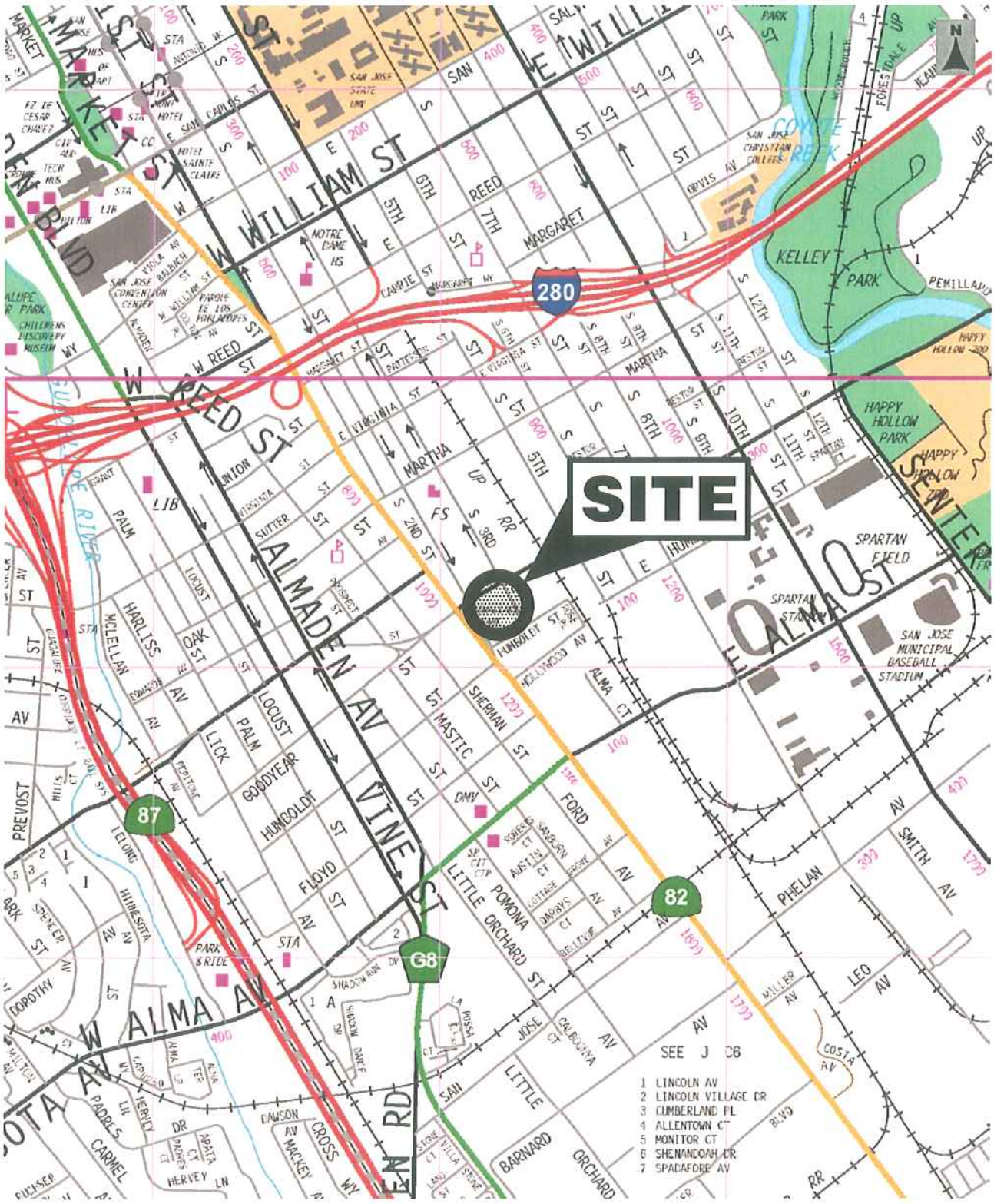


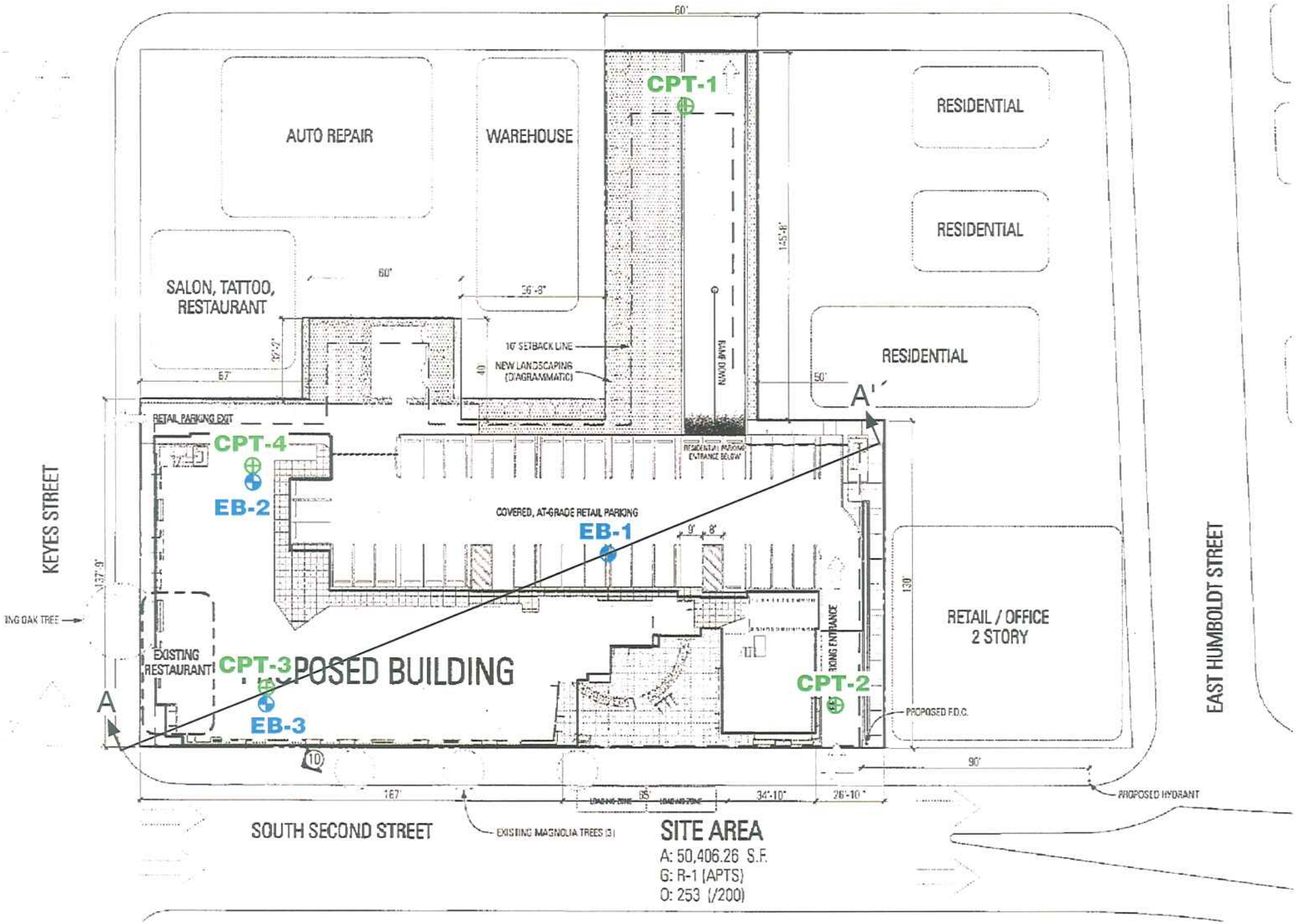
8:07*EB

VICINITY MAP

SOUTH 2ND GATEWAY APARTMENTS
San Jose, California

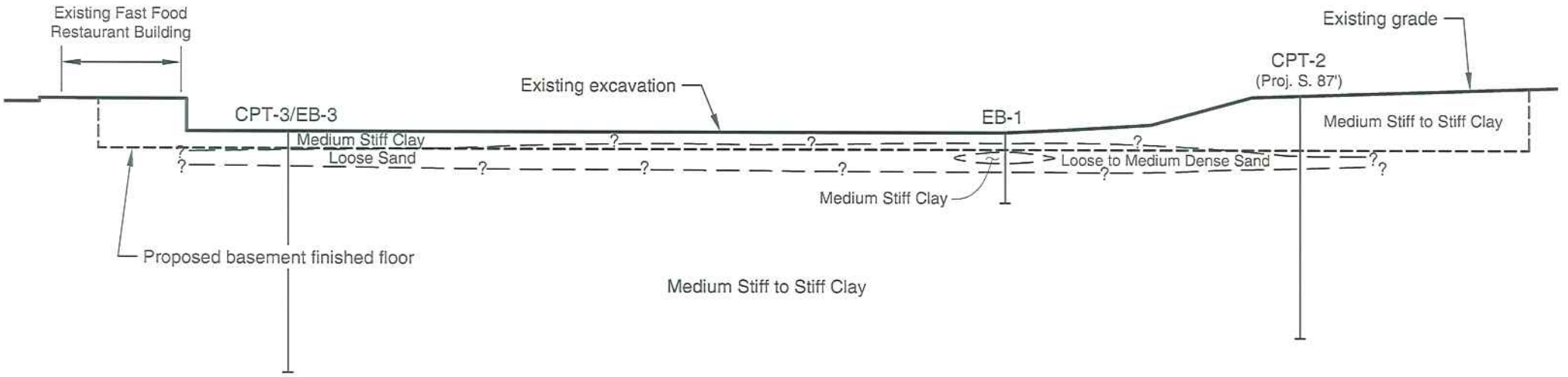
TRC

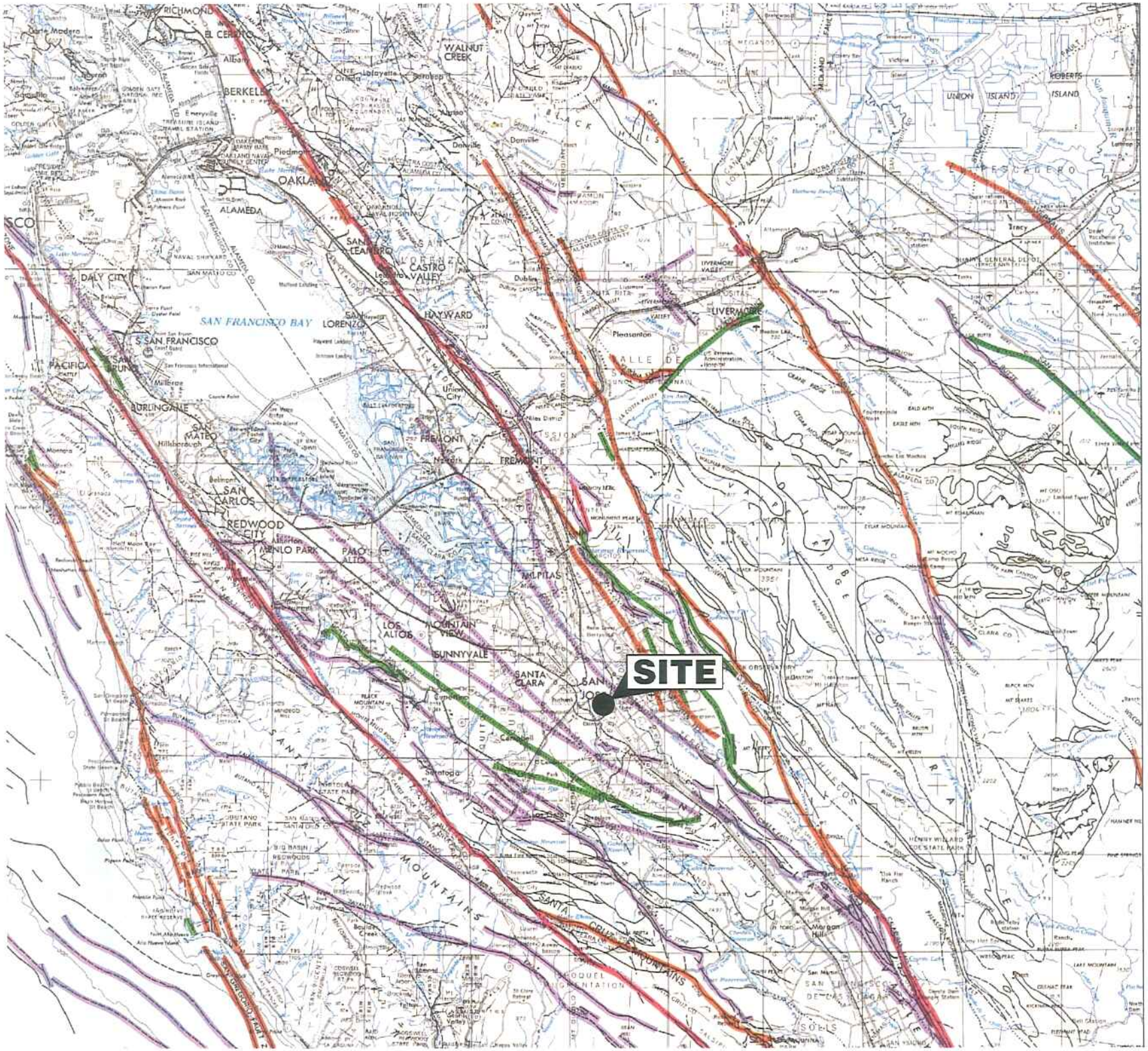
FIGURE 1
762-11/153440



roximate location of exploratory boring

SOUTH


Existing Fast Food
Restaurant Building
Existing grade
CPT-2
(Proj. S. 87')
Existing excavation
CPT-3/EB-3
EB-1
Medium Stiff to Stiff Clay
Medium Stiff Clay
Loose Sand
Loose to Medium Dense Sand
Medium Stiff Clay
Proposed basement finished floor
Medium Stiff to Stiff Clay



Base map is a compo
scale map (reference
the San Jose 1:250,0
37 120–A1–TF–250–
to these maps. Bathy
for navigational purpo

Transverse Mercator P
Transverse Mercator g

Minor corrections and
Division of Mines and

From: Bortugno & oth

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RI
SOUTH

APPENDIX A

FIELD INVESTIGATION

The field investigation consisted of a surface reconnaissance and a subsurface exploration program using truck-mounted, hollow-stem auger drilling and cone penetration test (CPT) equipment. Three 8-inch-diameter exploratory borings were drilled on September 6, 2007, to a maximum depth of 25 feet; Four CPTs were advanced on September 4, 2007, to a maximum depth of 50 feet. CPT data was obtained at 0.16 feet (5 centimeter) intervals and consisted of cone tip resistance, sleeve friction, dynamic pore pressure and other parameters. The approximate locations of the exploratory borings and CPTs are shown on the Site Plan, Figure 2. The soils encountered were continuously logged in the field by our representative and described in accordance with the Unified Soil Classification System (ASTM D2488). The logs of the borings and CPTs, as well as a key to the classification of the soil and CPT interpretations, are included as part of this appendix.

The locations of borings and CPTs were approximately determined by pacing from existing site boundaries and structures. Elevations of the borings and CPTs were interpolated from plan contours. The locations and elevations of the borings and CPTs should be considered accurate only to the degree implied by the method used.

Representative soil samples were obtained from the borings at selected depths. All samples were returned to our laboratory for evaluation and appropriate testing. Penetration resistance blow counts were obtained by dropping a 140-pound hammer 30 inches. Modified California 2.5-inch inside diameter and Standard Penetration Test (SPT) 2-inch outside diameter samples were obtained by driving the samplers 18 inches and recording the number of hammer blows for each 6 inches of penetration. Relatively undisturbed samples were also obtained with 2.875-inch I.D. Shelby Tube sampler which were hydraulically pushed. Unless otherwise indicated, the blows per foot recorded on the boring logs represent the accumulated number of blows required to drive the samplers the last two 6-inch increments. When using the SPT sampler, the last two 6-inch increments is the uncorrected SPT measured blow count. The various samplers are denoted at the appropriate depth on the boring logs and symbolized as shown on Figure A-1.

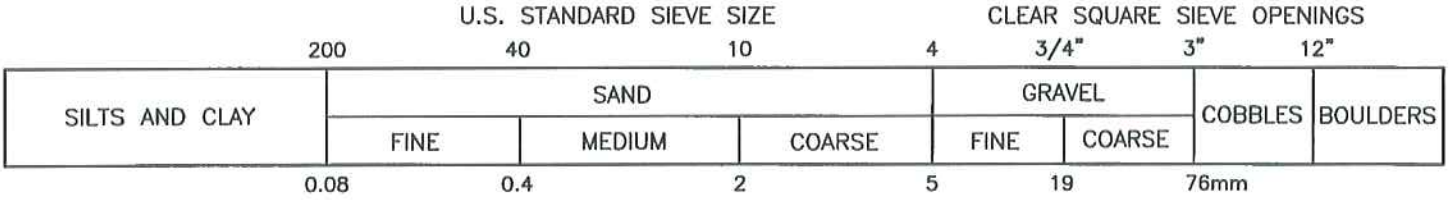
Field tests included an evaluation of the undrained shear strength of soil samples using a Torvane device, and the unconfined compressive strength of the soil samples using a pocket penetrometer device. The results of these tests are presented on the individual boring logs at the appropriate sample depths.

The attached boring and CPT logs and related information depict subsurface conditions at the locations indicated and on the date designated on the logs. Subsurface conditions at other locations may differ from conditions occurring at these boring and CPT locations. The passage of time may result in altered subsurface conditions due to environmental changes. In addition, any stratification lines on the logs represent the approximate boundary between soil types and the transition may be gradual.

* * * * * * * * * * * * *

PRIMARY DIVISIONS			SOIL TYPE		SECONDARY DIVISIONS
COARSE GRAINED SOILS (MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE)	GRAVELS (MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE)	CLEAN GRAVELS (Less than 5% Fines)	GW		Well graded gravels, gravel–sand mixtures, little or no fines
			GP		Poorly graded gravels or gravel–sand mixtures, little or no fines
		GRAVEL WITH FINES	GM		Silty gravels, gravel–sand–silt mixtures, plastic fines
			GC		Clayey gravels, gravel–sand–clay mixtures, plastic fines
	SANDS (MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE)	CLEAN SANDS (Less than 5% Fines)	SW		Well graded sands, gravelly sands, little or no fines
			SP		Poorly graded sands or gravelly sands, little or no fines
		SANDS WITH FINES	SM		Silty sands, sand–silt–mixtures, non–plastic fines
			SC		Clayey sands, sand–clay mixtures, plastic fines
FINE GRAINED SOILS (MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE)	SILTS AND CLAYS (LIQUID LIMIT IS LESS THAN 50 %)		ML		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL		Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS (LIQUID LIMIT IS GREATER THAN 50 %)		MH		Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH		Inorganic clays of high plasticity, fat clays
			OH		Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS			PT		Peat and other highly organic soils

DEFINITION OF TERMS



GRAIN SIZES

SAMPLERS

SAND AND GRAVEL	BLOWS/FOOT*
VERY LOOSE	0–4
LOOSE	4–10
MEDIUM DENSE	10–30
DENSE	30–50
VERY DENSE	OVER 50

RELATIVE DENSITY

SILTS AND CLAYS	STRENGTH+	BLOWS/FOOT*
VERY SOFT	0–1/4	0–2
SOFT	1/4–1/2	2–4
MEDIUM STIFF	1/2–1	4–8
STIFF	1–2	8–16
VERY STIFF	2–4	16–32
HARD	OVER 4	OVER 32

CONSISTENCY

*Number of blows of 140 pound hammer falling 30 inches to drive a 2–inch O.D. (1–3/8 inch I.D.) split spoon (ASTM D–1586).
+Unconfined compressive strength in tons/sq.ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D–1586), pocket penetrometer, torvane, or visual observation.

KEY TO EXPLORATORY BORING LOGS

Unified Soil Classification System (ASTM D–2487)

TRC Lowney

FIGURE A–1

EXPLORATORY BORING: EB-1

DRILL RIG: MOBILE B-53
BORING TYPE: 8 INCH HOLLOW-STEM
LOGGED BY: AC
START DATE: 9-6-07 FINISH DATE: 9-6-07

PROJECT NO: 762-11/153440
PROJECT: 1140 SOUTH 2ND STREET
LOCATION: SAN JOSE, CA
COMPLETION DEPTH: 15.0 FT.

This log is a part of a report by TRC, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (FT)	DEPTH (FT)	MATERIAL DESCRIPTION AND REMARKS	SOIL TYPE	PENETRATION RESISTANCE (BLOWS/FT.)	SAMPLER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PERCENT PASSING NO. 200 SIEVE
		SURFACE ELEVATION: 96 FT. (+/-)						
96.0	0	**SANDY LEAN CLAY (CL)** very stiff, moist, brown, fine sand, low plasticity	CL					
94.3		**CLAYEY SAND (SC)** medium dense, moist, brown, fine sand	SC	19		22	104	
93.0		**SANDY LEAN CLAY (CL)**	CL					
92.3		medium stiff, moist, brown, fine sand, low plasticity		15		25	98	33
	5	**CLAYEY SAND TO SANDY CLAY (SC-CL)** loose, moist, wet, brown, fine sand		8		28	86	52
		A lense of sandy clay	SC-CL	9		28	90	35
87.5		**SANDY LEAN CLAY (CL)** medium stiff, wet, brown, fine sand, low plasticity	CL					
84.5		**LEAN CLAY (CL)** stiff, moist, gray, some fine sand, moderate plasticity	CL	20		30	93	
81.0	15	Bottom of Boring at 15 feet						
	20							
	25							
	30							

Undrained Shear Strength (ksf)
○ Pocket Penetrometer
△ Torvane
● Unconfined Compression
▲ U-U Triaxial Compression
1.0 2.0 3.0 4.0

GROUND WATER OBSERVATIONS:
▽: FREE GROUND WATER MEASURED DURING DRILLING AT 5.0 FEET

LA CORP.GDT 10/1/07 MV* EB

TRC

EXPLORATORY BORING: EB-2

Sheet 1 of 1

DRILL RIG: MOBILE B-53	PROJECT NO: 762-11/153440
BORING TYPE: 8 INCH HOLLOW-STEM	PROJECT: 1140 SOUTH 2ND STREET
LOGGED BY: AC	LOCATION: SAN JOSE, CA
START DATE: 9-6-07 FINISH DATE: 9-6-07	COMPLETION DEPTH: 25.0 FT.

This log is a part of a report by TRC, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (FT)	DEPTH (FT)	MATERIAL DESCRIPTION AND REMARKS	SOIL TYPE	PENETRATION RESISTANCE (BLOWS/FT.)	SAMPLER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PERCENT PASSING NO. 200 SIEVE
103.0	0	SURFACE ELEVATION: 103 FT. (+/-)						
		SANDY LEAN CLAY (CL) very stiff, moist, brown, fine sand, low plasticity	CL	28		10	106	
		Plasticity Index = 9, Liquid Limit = 25		15		11	94	55
99.0	5	**SANDY SILT (ML)** very stiff, moist, brown, fine sand	ML	21		12	98	
96.7		**SANDY LEAN CLAY (CL)** hard, moist, brown, fine sand, low plasticity	CL					
94.5		**SILTY SAND (SM)** medium dense, moist, brown, fine sand	SM	15		13 10		27
92.5	10	**SANDY LEAN CLAY (CL)** medium stiff, moist, brown, fine sand, low plasticity	CL	15		30	91	
84.8	20	**FAT CLAY (CH)** medium stiff, moist, gray, moderate to high plasticity	CH			39	83	
78.0	25	Bottom of Boring at 25 feet		22		40	84	
	30							

Undrained Shear Strength (ksf)
○ Pocket Penetrometer
△ Torvane
● Unconfined Compression
▲ U-U Triaxial Compression
1.0 2.0 3.0 4.0

GROUND WATER OBSERVATIONS:
▽ : FREE GROUND WATER MEASURED DURING DRILLING AT 13.5 FEET

LA_CORP.GDT 10/1/07 MV* EB

TRC

EXPLORATORY BORING: EB-3

DRILL RIG: MOBILE B-53
BORING TYPE: 8 INCH HOLLOW-STEM
LOGGED BY: AC
START DATE: 9-6-07 FINISH DATE: 9-6-07

PROJECT NO: 762-11/153440
PROJECT: 1140 SOUTH 2ND STREET
LOCATION: SAN JOSE, CA
COMPLETION DEPTH: 15.0 FT.

This log is a part of a report by TRC, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

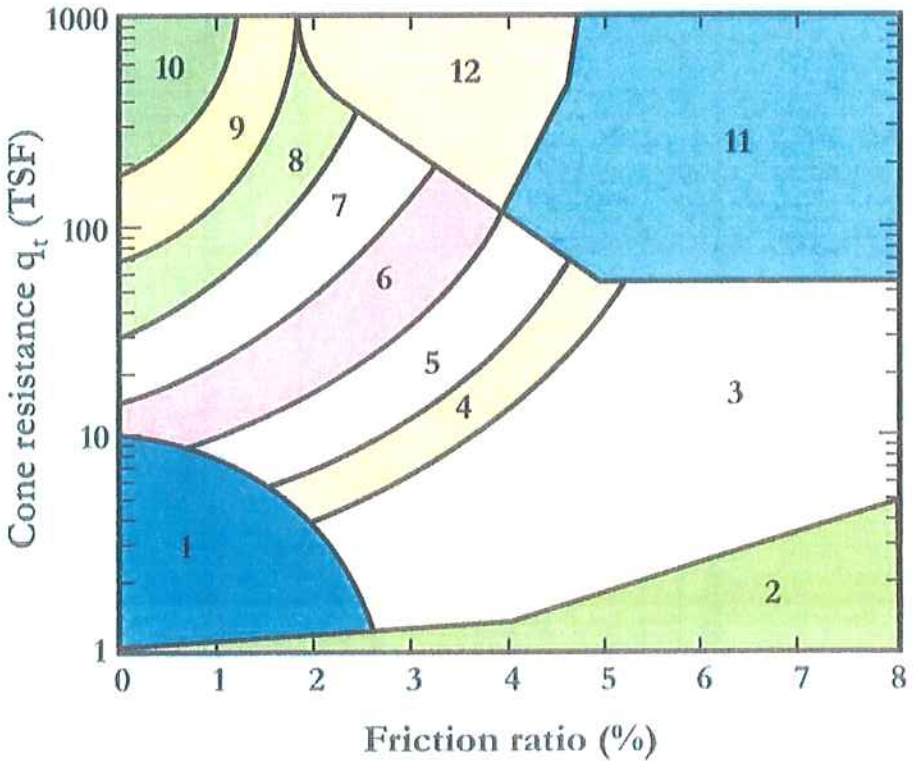
ELEVATION (FT)	DEPTH (FT)	MATERIAL DESCRIPTION AND REMARKS	SOIL TYPE	PENETRATION RESISTANCE (BLOWS/FT.)	SAMPLER	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	PERCENT PASSING NO. 200 SIEVE
		SURFACE ELEVATION: 95 FT. (+/-)						
95.0	0	**SANDY LEAN CLAY (CL)** hard, moist, brown, fine sand, low plasticity	CL					
93.3		**CLAYEY SAND (SC)**	SC	14		23	95	
92.5		medium dense, moist, brown, fine sand	CL					
91.0		**SANDY LEAN CLAY (CL)** very stiff, moist, brown, fine sand, low plasticity						
	5	**SILTY SAND (SM)** loose, wet, brown, fine sand	SM	10		25		21
88.5		**SANDY LEAN CLAY (CL)** medium stiff, moist, brown, fine sand, low plasticity	CL					
85.5	10	**LEAN CLAY (CL)** medium stiff, moist, brown and greenish gray mottled, some fine sand, low plasticity	CL			37	84	
83.0		**LEAN CLAY (CL)** stiff, moist, gray, moderate plasticity	CL	12		30	92	
80.0	15	Bottom of Boring at 15 feet						
	20							
	25							
	30							

Undrained Shear Strength (ksf)
○ Pocket Penetrometer
△ Torvane
● Unconfined Compression
▲ U-U Triaxial Compression
1.0 2.0 3.0 4.0

GROUND WATER OBSERVATIONS:
▽: FREE GROUND WATER MEASURED DURING DRILLING AT 5.0 FEET

LA_CORP.GDT 10/1/07 MV* EB

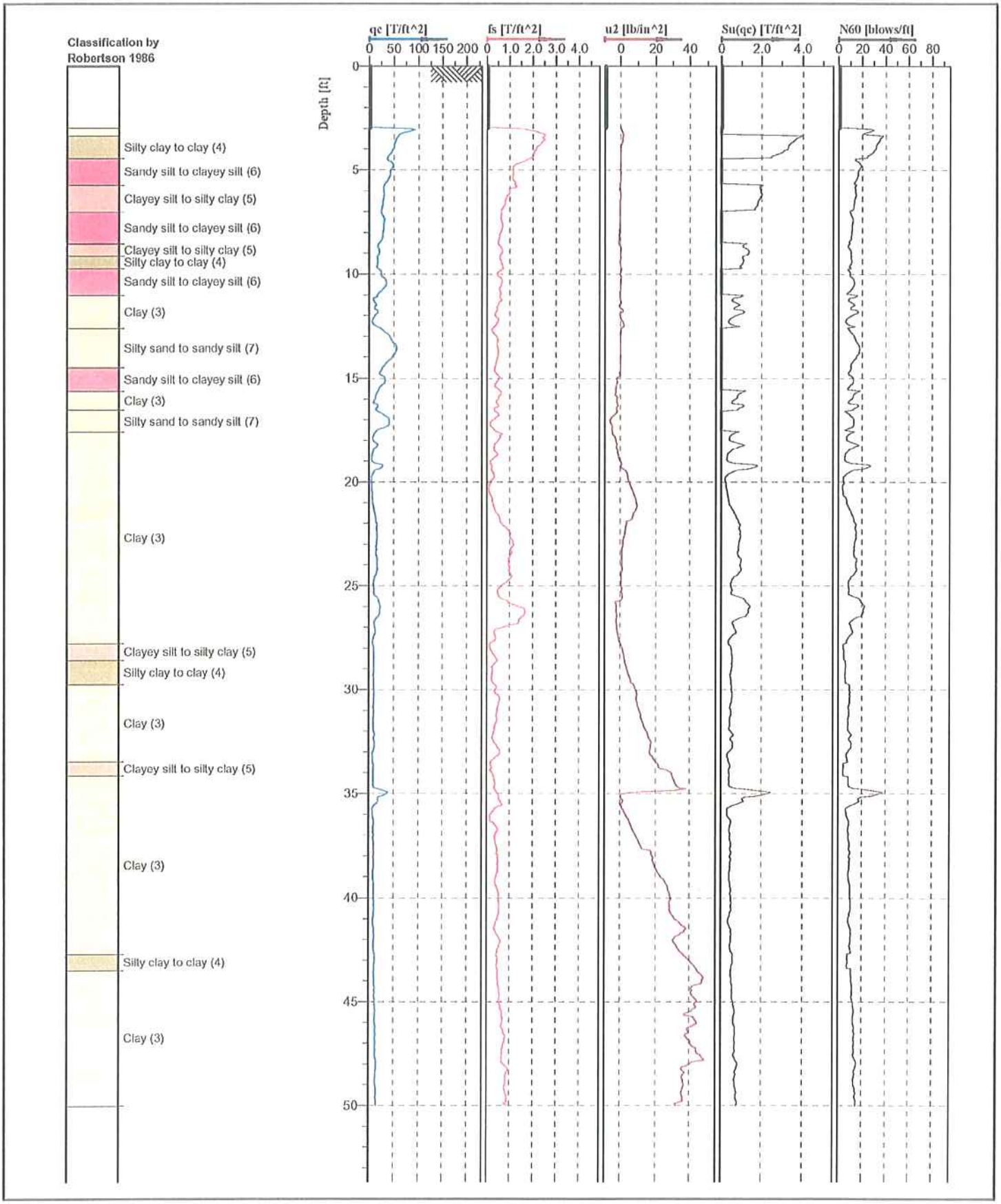
TRC



Zone	Soil Behavior Type
1	sensitive fine grained
2	organic material
3	clay
4	silty clay to clay
5	clayey silt to silty clay
6	sandy silt to clayey silt
7	silty sand to sandy silt
8	sand to silty sand
9	sand
10	gravelly sand to sand
11	very stiff fine grained (overconsolidated or cemented)
12	sand to clayey sand (overconsolidated or cemented)

Source: Robertson, P.K., Campanella, R.G., Gillespie, D., and Greig, J., 1986, Use of Piezometer Cone Data. Proceedings of the ASCE Specialty Conference In Situ 86: Use of In Situ Tests in Geotechnical Engineering.

KEY TO CONE PENETROMETER TEST



CONE PENETRATION TEST - CPT-1

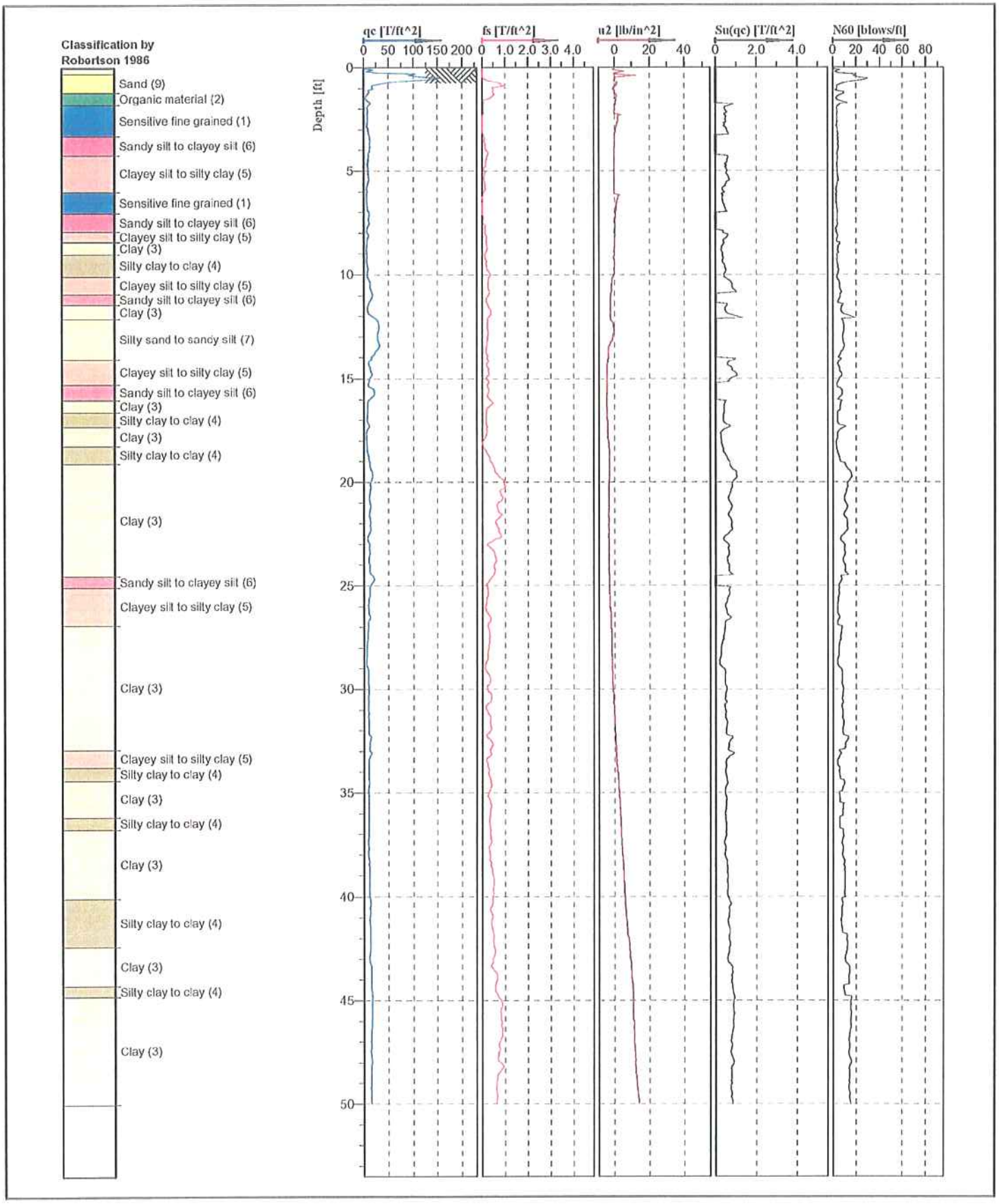
SOUTH 2ND GATEWAY APARTMENTS

San Jose, California

TRC

CPT-1

762-11/153440



CONE PENETRATION TEST - CPT-2

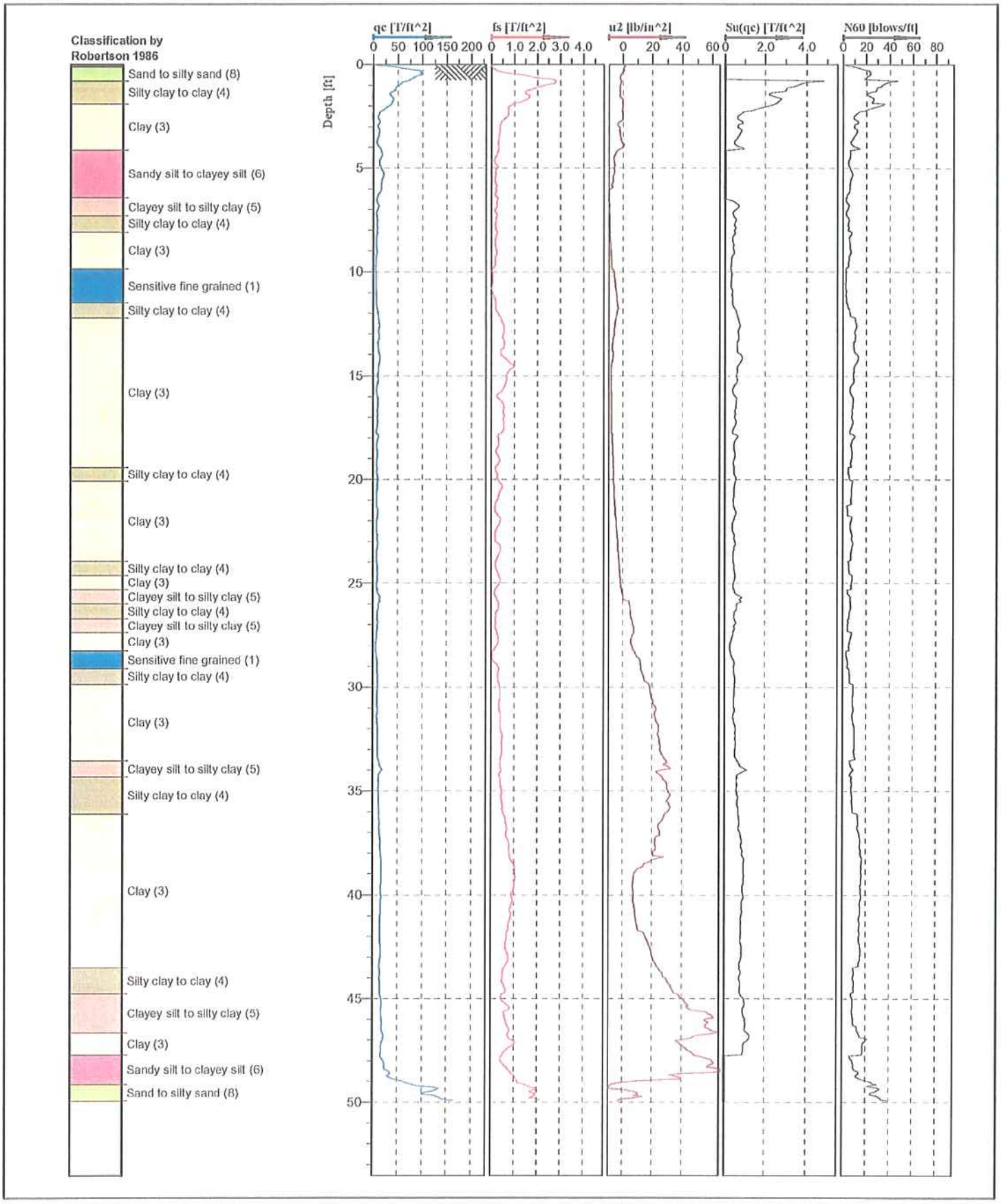
SOUTH 2ND GATEWAY APARTMENTS

San Jose, California

TRC

CPT-2

762-11/153440



CONE PENETRATION TEST - CPT-3

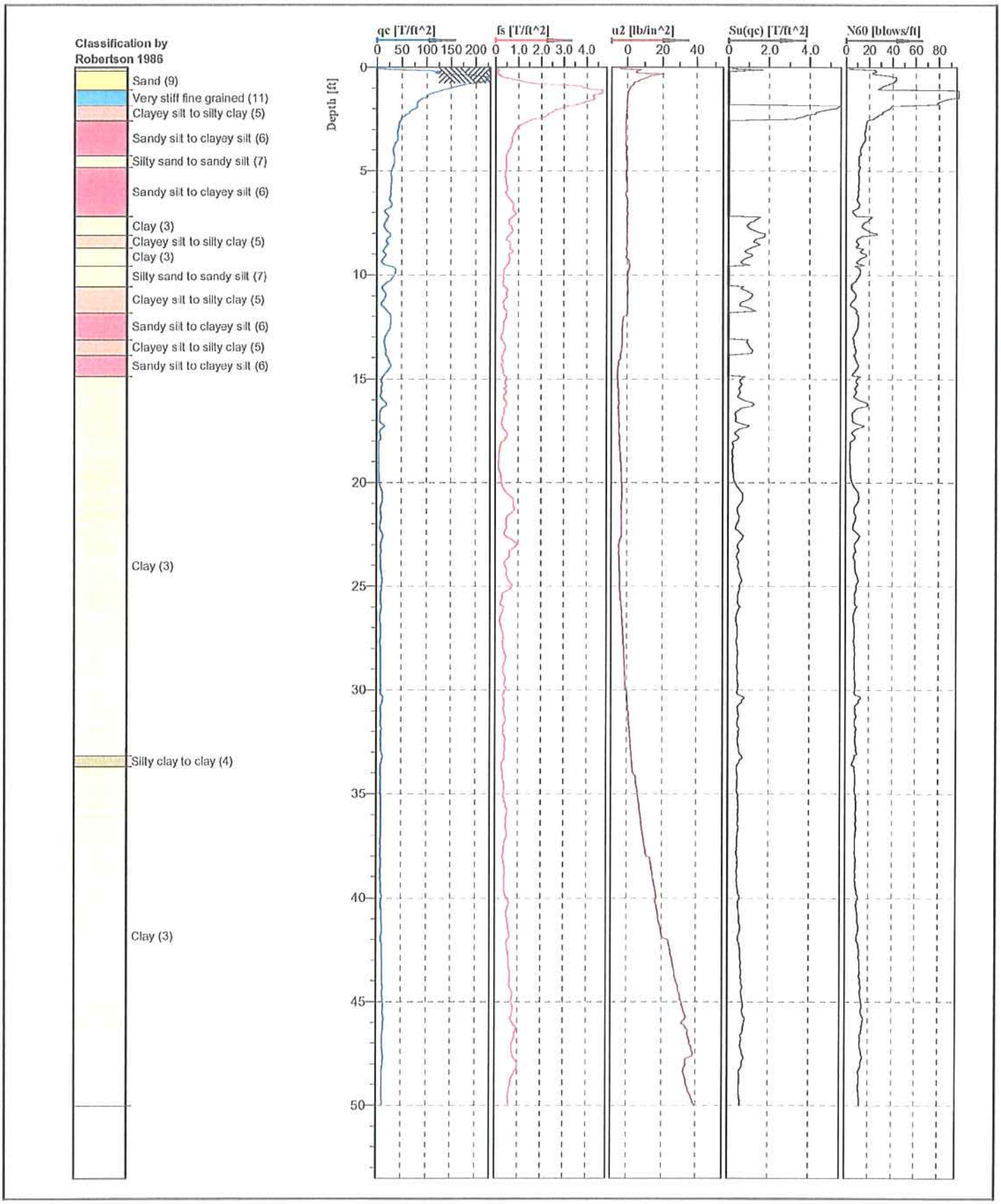
SOUTH 2ND GATEWAY APARTMENTS

San Jose, California

TRC

CPT-3

762-11/153440



CONE PENETRATION TEST - CPT-4

SOUTH 2ND GATEWAY APARTMENTS

San Jose, California

TRC

CPT-4

762-11/153440

APPENDIX B

LABORATORY PROGRAM

The laboratory testing program was directed toward a quantitative and qualitative evaluation of the physical and mechanical properties of the soils underlying the site and to aid in verifying soil classification.

Moisture Content: The natural water content was determined (ASTM D2216) on 17 samples of the materials recovered from the borings. These water contents are recorded on the boring logs at the appropriate sample depths.

Dry Densities: In place dry density test (ASTM D2937) was performed on 14 samples to measure the unit weight of the subsurface soils. Results of these tests are shown on the boring logs at the appropriate sample depths.

Plasticity Index: One Plasticity Index (PI) test (ASTM D4318) was performed on a sample of the near surface soils to measure the range of water contents over which this material exhibits plasticity. The PI was used to classify the soil in accordance with the Unified Soil Classification System and to evaluate the soil expansion potential. Results of this test are presented on the Plasticity Chart of this appendix and on the log of the boring at the appropriate sample depth.

Washed Sieve Analyses: The percent soil fraction passing the No. 200 sieve (ASTM D1140) was performed on six samples of the subsurface soils to aid in the classification of these soils. Results of these tests are shown on the boring logs at the appropriate sample depths.

Consolidation: Consolidation tests (ASTM D2435) were performed on two relatively undisturbed samples of the subsurface clayey soils to assist in evaluating the compressibility properties of these soils. Results of the consolidation tests are presented graphically on Figures B-2 and B-3.

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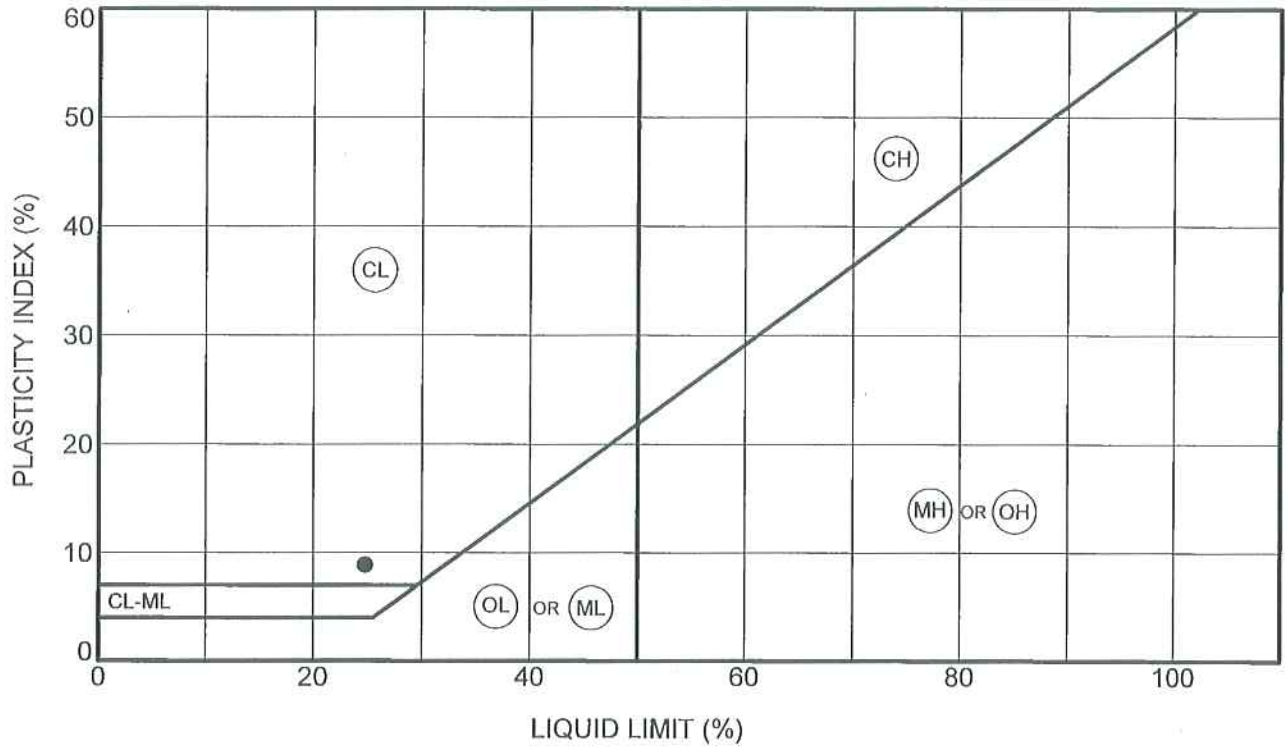


Symbol	Boring No.	Depth (ft.)	Natural Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing No. 200 Sieve	Unified Soil Classification Description
●	EB-2	1.5	10	25	16	9		SANDY LEAN CLAY (CL)

A_CORP GDT 9/21/07 MV* EB

TRC

PLASTICITY CHART AND DATA

Project: 1140 SOUTH 2ND STREET

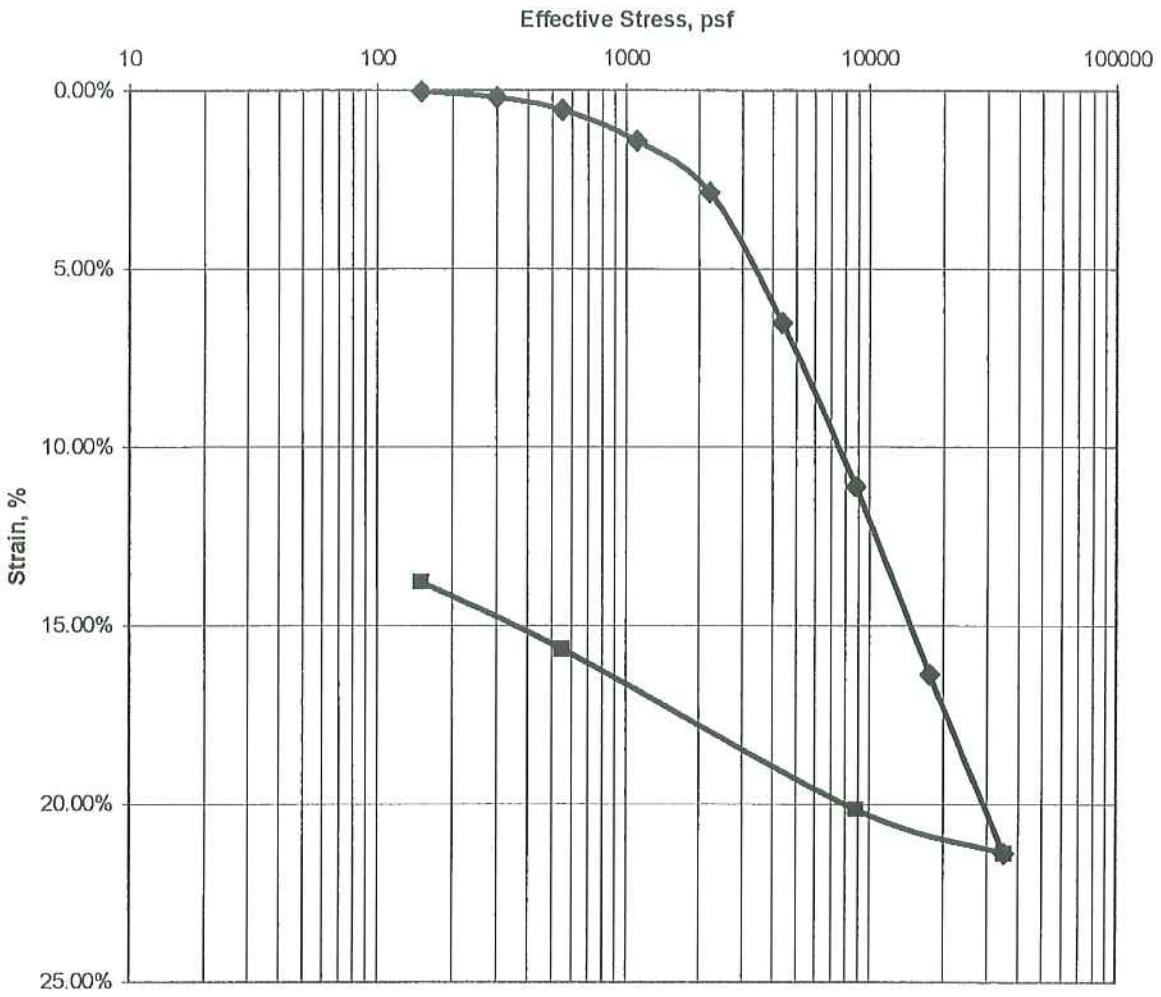
Location: SAN JOSE, CA

Project No.: 762-11/153440

FIGURE B-1

Job No.:	762-11 / 153440	Boring:	EB-2	Run By:	MD
Client:		Sample:	6A	Reduced:	PJ
Project:	S. 2nd Gateway Apartments	Depth, ft.:	17.5	Checked:	PJ/DC
Soil Type:	Gray CLAY			Date:	9/26/2007

Strain-Log-P Curve



Ass. Gs = 2.75	Initial	Final
Moisture %:	38.6	29.6
Dry Density, pcf:	82.5	94.7
Void Ratio:	1.081	0.813
% Saturation:	98.2	100

Remarks:

CONSOLIDATION TEST

SOUTH 2ND GATEWAY APARTMENTS

San Jose, California

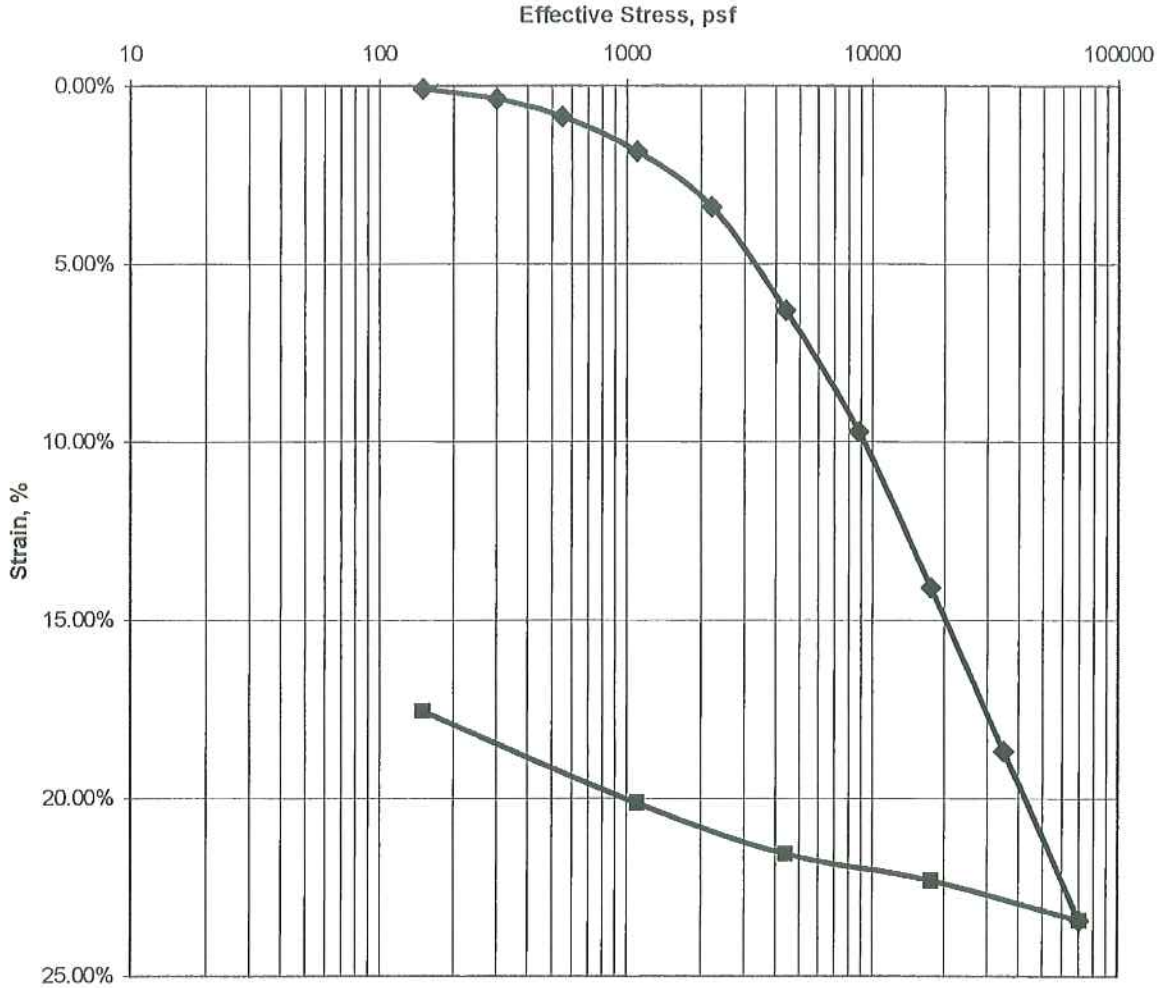
TRC

FIGURE B-2

762-11/153440

Job No.:	762-11 / 153440	Boring:	EB-3	Run By:	MD
Client:		Sample:	3A	Reduced:	PJ
Project:	S. 2nd Gateway Apartments	Depth, ft.:	8.5	Checked:	PJ/DC
Soil Type:	Gray SILT (slightly plastic)			Date:	9/26/2007

Strain-Log-P Curve



Ass. Gs = 2.75	Initial	Final
Moisture %:	36.6	25.2
Dry Density, pcf:	84.4	101.5
Void Ratio:	1.033	0.692
% Saturation:	97.4	100

Remarks:

CONSOLIDATION TEST

SOUTH 2ND GATEWAY APARTMENTS

San Jose, California

TRC

FIGURE B-3

762-11/153440

APPENDIX B

PHASE I ASSESSMENT

PHASE I
ENVIRONMENTAL SITE ASSESSMENT
1102 to 1150 South Second Street
San Jose, California

November 2007

Prepared for

First Community Housing
75 E. Santa Clara Street, Suite 1250
San Jose, California 95113

Prepared by

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SIGNATURE PAGE

In conformance with 40 CFR 312, the undersigned "declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in § 312.10 of 40 CFR 312."

"We have the specific qualifications based on education, training and experience to assess a property of the nature, history and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312."

Peter M. Krasnoff
California Registered Civil Engineer (44031)

11/16/07
Date

Peter E. Morris
California Professional Geologist (7084)

11/16/07
Date

1.0 INTRODUCTION

West Environmental Services & Technology, Inc. (WEST) prepared the *Phase I Environmental Site Assessment* ("*Phase I ESA*") for the property at 1102 to 1150 South Second Street in San Jose, California ("the Site;" Figure 1-1). This *Phase I ESA* was conducted in accordance with: 1) the United States Environmental Protection Agency's (USEPA's) Chapter 40 Code of Federal Regulations Part 312, *Standards and Practices for All Appropriate Inquiry: Final Rule* (40 CFR 312); and 2) American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process E 1527-05* (ASTM E 1527).

1.1 PURPOSE

The objective of performing the *Phase I ESA* was to identify recognized environmental conditions at the Site related to the previous ownership and uses of the Site and adjoining properties. Recognized environmental conditions, as applied in the scope of this work, are the presence or likely presence of any hazardous substance or petroleum product at the Site under conditions that indicate an existing release, a past release or a material threat of release into structures or into the ground, groundwater or surface water of the Site.

1.2 DETAILED SCOPE-OF-SERVICES

The work followed the guidelines as outlined in 40 CFR 312 and ASTM E 1527, except as otherwise noted. Specifically, WEST performed the following activities:

- WEST obtained and reviewed reasonably ascertainable background data on the characteristics and previous uses of the Site. The work included reviewing selected historical aerial photographs, topographic maps, Sanborn Fire Insurance Maps and reasonably ascertainable data on the geology and hydrogeology of the Site and vicinity;

- WEST conducted a Site reconnaissance of accessible exterior portions of the grounds and performed a drive-by reconnaissance of the surrounding neighborhood;

- WEST conducted an interview with the Site owner representative to obtain information regarding the previous and current uses of the Site;

- WEST searched pertinent regulatory records concerning potential releases of hazardous materials at the Site and surrounding properties that may have impacted soil and/or groundwater quality. Representatives of appropriate regulatory agencies were contacted regarding regulatory records for the Site and surrounding area;

- The findings were evaluated to develop opinions regarding whether they represented recognized environmental conditions; and

- WEST performed a data gap analysis.

The scope of this *Phase I ESA* also included collection soil, soil gas and groundwater samples for analysis. The scope of the *Phase I ESA* did not include evaluations for possible natural hazards such as naturally occurring radon gas, methane gas or the potential for earthquake or flood damage.

1.3 LIMITATIONS AND EXCEPTIONS

The observations and conclusions presented in this report are professional opinions based on the activities conducted and the information obtained during the environmental assessment described herein. Opinions presented here apply only to the observed Site conditions existing at the time of the assessment and cannot necessarily apply to Site conditions or changes of which this office is not aware or has not had the opportunity to evaluate. Any conclusions drawn from this data rely on the integrity of the information available at the time of the investigation and an absolute determination of environmental risks cannot be made.

1.4 SPECIAL TERMS AND CONDITIONS

Collection of soil, soil gas and groundwater samples for laboratory analysis was conducted to characterize suspect recognized environmental conditions.

1.5 USER RELIANCE

The *Phase I ESA* report is for the exclusive use of the User and its designees. Use of this report by any other party shall be at such party's sole risk.

1.6 EXECUTIVE SUMMARY

The approximately one-acre Site is composed of four adjoining parcels located along Keyes Street, South Second Street and South Third Street in San Jose, California. The Assessors Parcel Numbers (APNs) for the Site include: 477-01-074; 477-01-079; 477-01-082; and 477-01-083.

Between 1915 and the 1940s, the Site was developed for residential use. Between the 1940s and the 1960s, a gasoline service station operated at 1102 South Second Street (currently 52 Keyes Street). Between the 1960s and 2001, the Park View Motel operated at 1140 to 1150 South Second Street. Between 1915 and 2007, historical activities conducted on the neighboring properties have included: automobile repair shops (1101 and 1125 South Third Street); camping equipment manufacturing, coffee roasting and heating and ventilation operations (1145 South Third Street); gasoline service stations (1099 South First Street, 1098 South Second Street and 1098 South Third Street); and auto sales (1200 block of south First Street).

Currently, the Site is vacant with the exception of a Pizza Hut restaurant located at 52 Keyes Street. A portion of the Site has been excavated to a depth of approximately eight feet below the surrounding ground surface. A soil stockpile is also present east of the excavation. In addition, dewatering wells appear to have been installed around the perimeter of the excavation. Consistent with 40 CFR 312 and ASTM E 1527, no data gaps of historical records were

identified; however, additional investigations including the collection of soil, soil gas and groundwater samples were deemed necessary to characterize suspect recognized environmental conditions.

2.0 SITE DESCRIPTION

The approximately one-acre gently sloping Site is composed of four adjoining parcels at an approximate elevation of 100 feet above Mean Sea Level. The Site is located along the east side of South Second Street with portions of the Site bordering along Keyes Street and South Third Street (Figure 2-1). The APNs for the Site include: 477-01-074; 477-01-079; 477-01-082; and 477-01-083.

The Site is currently vacant with the exception of a Pizza Hut restaurant on the corner of South Second Street and Keyes Street. Features on the Site have included: residential dwellings; a gasoline service station; and a motel. A portion of the Site has been excavated and dewatering wells are present along the perimeter of the excavation.

2.1 GEOLOGICAL AND HYDROGEOLOGICAL SETTING

The Site is located within the Santa Clara Valley portion of the Coast Ranges Geomorphic Province. The Site geology is underlain by unconsolidated alluvial and fluvial deposits composed of clays, silts, sands and gravels to depth of approximately 25 feet below ground surface (Shaw, 2002). Groundwater has been encountered between approximately 16 feet and 20 feet below ground surface near the Site within coarse-grained sands. The groundwater-bearing unit is underlain by a fined-grained clay unit. Groundwater flow direction near the Site varies from west to the northeast.

2.2 SURFACE WATER

The Site is located approximately 0.75-miles from Coyote Creek to the east. The San Francisco Bay is located approximately 14 miles to the northwest (Shaw, 2002).

2.3 CURRENT USES OF ADJOINING PROPERTIES

The Site is bounded by Keyes Street to the north, South Third Street to the east and South Second Street to the west. Current uses of adjoining properties include public open space, commercial operations and residential dwellings. A park is located across south Second Street to the west. Commercial operations including a beauty salon and automobile repair are located to the northeast and east along South Third Street. Residential dwellings are located to the southeast. A two-story commercial office building is also located to the south.

3.0 USER PROVIDED INFORMATION

WEST submitted a questionnaire to the User to assist in identifying the known recognized environmental conditions in connection with the Site.

3.1 TITLE RECORDS

A preliminary title report was provided by the User for review as part of the *Phase I ESA*. A copy of the preliminary title report is included in Appendix A.

3.2 ENVIRONMENTAL LIENS OR ACTIVITY AND USE LIMITATIONS

No environmental liens, activity and/or use limitations were reported by the User for the Site.

3.3 SPECIALIZED KNOWLEDGE

The User indicated no specialized knowledge of the Site.

3.4 VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES

The User indicated no environmental issues related to valuation reduction of the Site.

3.5 OWNER, PROPERTY MANAGER, AND OCCUPANT INFORMATION

The User indicated that property manager representative for the Site is Mr. Ashwin Patel.

3.6 REASON FOR PERFORMING PHASE I ESA

The User indicated the purposes for conducting the *Phase I ESA* was for the proposed development of the Site for residential and commercial use. A copy of the User Questionnaire is included in Appendix A.

3.7 OTHER

The User indicated that the Site is proposed for residential and commercial use. A copy of the User Questionnaire is included in Appendix A.

4.0 RECORDS REVIEW

A records review was conducted to identify recognized environmental conditions at the Site. The records searched for this *Phase I ESA* consisted of standard federal and state environmental record sources as defined in ASTM E 1527.

Historical records searched as part of the *Phase I ESA* included: aerial photographs; topographic maps; Sanborn Fire Insurance Maps; and city directories. Summaries of the historical uses associated with the Site and surrounding areas are depicted on Figure 2-1.

4.1 STANDARD ENVIRONMENTAL RECORD SOURCES

An environmental database report was prepared by Environmental Data Resources (EDR) of Southport, Connecticut and consisted of a review of federal and state regulatory listings for sites within the search radii established under the ASTM E 1527 (EDR, 2007). A summary of the relevant database report findings is included in Table 7-1. A copy of the EDR environmental database report is included in Appendix A.

4.2 ADDITIONAL ENVIRONMENTAL RECORDS SOURCES

Additional environmental records sources included reasonably ascertainable records including:

- Confidential Compliance Consultants, Inc.'s *Second Street Project, 1140 South Second Street, San Jose, CA, "Phase One" Environmental Assessment,* May 29, 2007;

- Shaw Environmental and Infrastructure Inc.'s *Corrective Action Plan, Former Shell Service Station, 1098 South First Street at Keyes Street, San Jose, California,* May 14, 2002;

- Gettler-Ryan Inc.'s *Groundwater Sampling Report, Former Shell Service Station, 1098 N 1st Street/Keyes, San Jose, California,* November 29, 1988;

- Conestoga-Rovers & Associates' *Groundwater Monitoring Report – First Quarter 2007, Former Shell Service Station, 1098 South First Street, San Jose, California,* April 27, 2007; and

- GeoStrategies, Inc.'s *Monitoring Well Installation Report, Former Shell Service Station, 1098 South First Street, San Jose, California,* April 20, 1990.

Building Department zoning and land use records including permits were obtained from the City of San Jose Building Department website (City of San Jose, 2007). Copies of the Building Department records are included in Appendix A.

4.3 PHYSICAL SETTING SOURCES

The San Jose West, California United States Geological Service (USGS) 7.5 Minute Quadrangle topographic maps were reviewed to identify geologic, hydrogeologic, hydrologic and topographic features of the Site and surrounding area. Copies of the USGS topographic maps are included in Appendix B.

4.4 HISTORICAL USE INFORMATION ON THE SITE

The objective for reviewing historical sources regarding past uses of the Site was to develop information regarding history of previous uses of the Site and surrounding area to identify the likelihood of past uses having led to recognized environmental conditions in connection with the Site. Reasonably ascertainable historical sources including aerial photographs, Sanborn Fire Insurance Maps and topographic maps were reviewed. Locations of relevant historical uses of the Site are identified on Figure 2-1. Copies of the historical aerial photographs, Sanborn Fire Insurance Maps and topographic maps are included in Appendix B.

4.5 HISTORICAL USE INFORMATION ON ADJOINING PROPERTIES

The information sources used for evaluating the historical use of the Site were reviewed to identify historical uses of adjoining properties. Locations of relevant historical uses of adjoining properties are identified on Figure 2-1.

5.0 SITE RECONNAISSANCE

A Site reconnaissance was performed by WEST on September 7, 2007 and October 24, 2007. Mr. Peter Morris, a representative of WEST, conducted the reconnaissance. The objective of the reconnaissance was to obtain information indicating the likelihood of recognized environmental conditions in connection with the Site. The reconnaissance included a visual observation of the Site and adjoining properties. A summary of the relevant conditions observed during the Site reconnaissance is included in Table 7-1. Photographs of the Site are included in Appendix C.

5.1 METHODOLOGY AND LIMITING CONDITIONS

As part of the reconnaissance, accessible portions of the Site were observed visually. Accessible physical conditions included pathways, access roads and walkways located on the perimeter of the Site. Accessible visual conditions included line of site from the accessible physical areas. Adjoining properties were also visually observed, where possible.

5.2 GENERAL SITE SETTING

Observations were made during the Site reconnaissance of current and past uses of the Site and adjoining properties likely to involve the use, treatment, storage, disposal or generation of hazardous substances or petroleum hydrocarbons. A summary of the observations is included in Table 7-1.

6.0 INTERVIEWS

The objective of the interviews was to obtain information indicating recognized environmental conditions in connection with the Site.

6.1 INTERVIEW WITH OWNER

The Site owner representative, Mr. Ashwin Patel, was contacted for an interview. A copy of the interview documentation is included in Appendix D. Other Site owner representatives were not identified for interviews.

6.2 INTERVIEW WITH PROPERTY MANAGER

The Site owner representative, Mr. Ashwin Patel, was contacted for an interview. A copy of the interview documentation is included in Appendix D. Other Site owner representatives were not identified for interviews.

6.3 INTERVIEW WITH OCCUPANTS

The Site was unoccupied; therefore, interviews of occupants were not conducted.

6.4 INTERVIEWS WITH LOCAL GOVERNMENT OFFICIALS

A representative of the Santa Valley Water District, Ms. Jan Romanski, was contacted regarding reasonably ascertainable environmental records for the Site. At the time of this *Phase I ESA*, Ms. Romanski had not responded to the interview questions. A representative of the City of San Jose Building Department, Ms. Karen Underwood, was contacted regarding reasonably ascertainable building permits for the Site and adjoining properties. Copies of the building department records are including in Appendix A.

6.5 INTERVIEWS WITH OTHERS

Other knowledgeable individuals regarding the Site uses and conditions were not identified.

7.0 FINDINGS AND CONCLUSIONS

We have performed a *Phase I ESA* in conformance with the scope and limitations of ASTM E 1527 of the Site. Any exceptions to, or deletions from, this practice are described in Section 8.0 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the Site. The findings, opinions and conclusions supporting the finding of no recognized environmental conditions at the Site are presented in Table 7-1.

8.0 DEVIATIONS

There were no deviations from the ASTM Practice E 1527 standard while conducting this *Phase I ESA* except for the following:

- Historical aerial photographs were not reviewed in 5-year increments;
- Site tax files were not reasonably ascertainable; and
- Soil, soil gas and groundwater samples were collected to characterize suspect recognized environmental conditions at the Site.

9.0 ADDITIONAL INVESTIGATIONS

Consistent with 40 CFR 312 Section 312.31 and ASTM E 1527 Section 12.6.1, an evaluation was conducted to identify whether additional investigations were needed to obtain greater certainty with regard to Site conditions. Additional investigations including the collection of soil, soil gas and groundwater samples, were conducted to characterize whether recognized environmental conditions are present at the Site. Summaries of the laboratory analytical results for the soil, soil gas and groundwater samples collected at the Site are included in Appendix E.

10.0 DATA GAPS

Consistent with 40 CFR 312 Section 312.20(g) and ASTM E 1527 Section 12.7, a data gap analysis was performed. No significant data gaps were identified.

11.0 ADDITIONAL SERVICES

A Phase II Environmental Site Assessment (Phase II ESA) investigation was conducted at the Site. Summaries of the Phase II ESA findings are in included in Appendix E.

12.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

This report has been prepared under the direction of Peter M. Krasnoff, P.E., a registered Civil Engineer with over 20 years of environmental assessment and evaluation experience. Mr. Krasnoff received his Master of Science from the University of California at Berkeley in Environmental Engineering and his Bachelor of Civil Engineering from the Georgia Institute of Technology. Mr. Krasnoff has extensive experience in environmental investigations and remediation and has conducted reviews of over 100 sites involving hazardous materials and waste disposal activities. Mr. Krasnoff was supported by Mr. Peter Morris, P.G., a Professional Geologist.

Mr. Morris, a Professional Geologist with over 17 years of environmental assessment and investigating experience, also prepared this *Phase I ESA*. Mr. Morris received his Bachelors of Science degree from the University of California at Davis in Geology and his Masters of Science degree in Civil and Environmental Engineering from George Washington University. Mr. Morris has conducted and supervised numerous site investigations involving the evaluation of hazardous materials and wastes with emphasis on soil and groundwater characterization and remediation.

13.0 REFERENCES

American Society for Testing and Materials, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM E 1527,* November 1, 2005 (ASTM E 1527).

American Society for Testing and Materials, *Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process, ASTM E 1528-06,* February 1, 2006 (ASTM E 1528).

City of San Jose Building Department, https://www.sjpermits.org/permits/permits, 2007 (City of San Jose, 2007).

Conestoga-Rovers & Associates, *Groundwater Monitoring Report – First Quarter 2007, Former Shell Service Station, 1098 South First Street, San Jose, California,* April 27, 2007 (CRA, 2007).

Confidential Compliance Consultants, Inc., *Second Street Project, 1140 South Second Street, San Jose, CA, "Phase One" Environmental Assessment,* May 29, 2007 (CCC, 2007).

Environmental Data Resources, *The EDR-Radius Map with GeoCheck®, Second Street ESA Project, 1140 South Second Street, San Jose, CA 95112,* December 4, 2006 (EDR, 2006).

GeoStrategies, Inc.'s *Monitoring Well Installation Report, Former Shell Service Station, 1098 South First Street, San Jose, California,* April 20, 1990 (GeoStrategies, 1990).

Gettler-Ryan Inc., *Groundwater Sampling Report, Former Shell Service Station, 1098 N 1st Street/Keyes, San Jose, California,* November 29, 1988 (Gettler-Ryan, 1988).

Shaw Environmental and Infrastructure Inc., *Corrective Action Plan, Former Shell Service Station, 1098 South First Street at Keyes Street, San Jose, California,* May 14, 2002 (Shaw, 2002).

State Water Resources Control Board, Geotracker Leaking Underground Storage Tank Database, 2007, http://geotracker.swrcb.ca.gov/ (Geotracker, 2007).

14.0 DISTRIBUTION LIST

Ms. Shelley Ratay
First Community Housing
75 E. Santa Clara Street, Suite 1250
San Jose, CA 95113

FINDINGS									OPINIONS
History	Known or suspect recognized environmental conditions	Chemicals						Regulatory Closure	Rationale
		TPH	VOCs	SVOCs	Pesticides	Metals	PCBs		
Between the 1940s and the 1960s, a Texaco gasoline service station formerly operated on a portion of the Site at 1102 South Second Street. The gasoline service station was located on the southeast corner of South Second Street and Keyes Street (CCC, 2007). Information regarding the removal of the: gasoline and waste oil underground storage tanks (USTs) and associated product piping; fuel islands; service bays; and hydraulic hoists, was not reasonably ascertainable. 1102 South Second Street portion of the Site is currently occupied by a Pizza Hut restaurant with and address of 52 Keyes Street. Between 1991 and 2007, laboratory analysis of groundwater samples collected from the service station located at 1098 South First Street, downgradient of the Site, revealed: total petroleum hydrocarbons as gasoline (TPHg) up to 44,000 ug/l; benzene up to 19,000 ug/l; toluene up to 1,700 ug/l; ethyl benzene up to 1,200 ug/l; and xylenes up to 3,900 ug/l (CRA, 2007). In October 2007, laboratory analysis of a groundwater sample W-1 collected downgradient of the former gasoline service station at the Site did not reveal the presence of TPHg or TPH as diesel (TPHd), benzene, toluene, ethyl benzene, xylenes (BTEX) or other volatile organic compounds (VOCs) above their respective laboratory-reporting limits (Appendix E). Laboratory analysis of a soil gas sample W-2 collected in October 2007 near the former gasoline service station revealed: benzene at 6.90 micrograms per cubic meter (ug/m3); toluene at 12.8 ug/m3; ethyl benzene at 6.04 ug/m3; xylenes at 17.8 ug/m3; styrene at 7.16 ug/m3 and 1,2,4-trimethylbenzene (1,2,4-TMB) at 7.03 ug/m3 which are below their respective CalEPA residential California Human Health Screening Levels (CHHSLs) for the protection of human health (Appendix E).	Potential releases from historical operations of the service station to soil gas and groundwater at the Site and contributions to groundwater downgradient of the Site of petroleum products containing VOCs	X	X						Based on the presence of BTEX and other VOCs i residential human health protection levels and the TPHd and VOCs in groundwater, the historical op former gasoline service station does not represent environmental condition.

FINDINGS									OPINIONS
History	Known or suspect recognized environmental conditions	Chemicals						Regulatory Closure	Rationale
		TPH	VOCs	SVOCs	Pesticides	Metals	PCBs		
The 1140 to 1150 South Second Street portion of the Site was formerly occupied by: residential dwellings between approximately 1915 and the 1950s; and the Park View Motel between the 1950s and 2000. In 2000, the motel was demolished. In 2007, the 1140 to 1150 South Second Street portion of the Site was visually and physically observed to be vacant and has been excavated to a depth of approximately 4-feet to 6-feet below the surrounding ground surface. A soil stockpile was also observed to be adjacent to the excavation. Information including the source of the soil stockpile and soil chemical characterization data was not reasonably ascertainable. Laboratory analysis of one four-way composite soil sample W-8 (1-4) collected from the stockpile did not reveal: TPHg, TPHd, polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides; and polychlorinated biphenyls (PCBs), above their respective laboratory-reporting limits (Appendix E). Laboratory analysis of one four-way composite soil sample, W-8 (1-4) collected from the stockpile did reveal metals including arsenic at 10.3 milligrams per kilogram (mg/kg) consistent with background concentrations of arsenic in the San Francisco Bay Area and lead at 17.9 below its CalEPA residential CHHSL of 150 mg/kg.	Potential presence of hazardous substances and petroleum products within the soil stockpile	X	X	X	X	X	X		Based on the soil sample laboratory data, the soil s not represent a recognized environmental conditio

FINDINGS										OPINIONS
History	Known or suspect recognized environmental conditions	Chemicals						Regulatory Closure		Rationale
		TPH	VOCs	SVOCs	Pesticides	Metals	PCBs			
Since the 1950s, an automobile repair shop operated at 1125 South Third Street (CCC, 2007). The automobile repair shop is located hydraulically upgradient from the Site. Products containing VOCs and petroleum hydrocarbons were potentially used, stored and disposed at 1125 South Third Street and may have included brake cleaners, automobile parts degreaser solvents and paints. Laboratory analysis of groundwater sample W-3 collected on the Site and downgradient of the automobile repair shop did not reveal TPHg, TPHd or VOCs above their respective laboratory-reporting limits (Appendix E). Laboratory analysis of a soil gas sample W-7 collected in October 2007 near the automobile repair shop revealed: benzene at 8.79 ug/m3; toluene at 11.0 ug/m3; ethyl benzene at 5.91 ug/m3; xylenes at 19.23 ug/m3; styrene at 8.77 ug/m3 and 1,2,4-TMB at 8.26 ug/m3 which are below their respective CalEPA residential CHHSLs for the protection of human health (Appendix E).	Potential releases from historical operation of the repair shop to soil and groundwater of hazardous substances containing VOCs that could have migrated beneath the Site	X	X							Based on the lack of TPHg, TPHd and VOCs in gr the presence of VOCs in soil gas below CalEPA re CHHSLs, the operation of the automobile repair sh South Third Street does not represent a recognized condition to the Site.

FINDINGS										OPINIONS
History	Known or suspect recognized environmental conditions	Chemicals						Regulatory Closure		Rationale
		TPH	VOCs	SVOCs	Pesticides	Metals	PCBs			
Between the 1950s and the 1980s, a camping equipment manufacturer, an insulation company, a coffee roasting company and a heating, ventilation and air conditioning company have operated at 1145 South Third Street (CCC, 2007). Chemicals containing VOCs for manufacturing and equipment maintenance activities may have been used, stored and disposed of at 1145 South Third Street. In October 2007, a potential vent pipe and asphalt patch area adjacent to the building at 1145 South Third Street was observed that may be indicative of a UST. Information regarding historical use, storage and disposal of hazardous wastes and use of the UST was not reasonably ascertainable. Laboratory analysis of a groundwater sample W-3 collected on the Site and downgradient of the potential UST and building at 1145 South Third Street did not reveal TPHg, TPHd or VOCs above their respective laboratory-reporting limits (Appendix E). Laboratory analysis of a soil gas sample W-6 collected in October 2007 near the potential UST and building at 1145 South Third Street revealed: benzene at 14.6 ug/m3; toluene at 15.3 ug/m3; ethyl benzene at 6.47 ug/m3; xylenes at 21.45 ug/m3; styrene at 8.18 ug/m3 and 1,2,4-TMB at 7.87 ug/m3 which are below their respective CalEPA residential CHHSLs for the protection of human health (Appendix E).	Potential releases of VOCs and petroleum products from the UST and solvents from the manufacturing operations to soil gas and groundwater that could have migrated beneath the Site	X	X						Based on the presence of VOCs in soil gas below r human health protective screening levels and the la VOCs in groundwater, the former manufacturing : potential UST at 1145 South Third Street do not re recognized environmental condition to the Site.

FINDINGS									OPINIONS
History	Known or suspect recognized environmental conditions	Chemicals						Regulatory Closure	Rationale
		TPH	VOCs	SVOCs	Pesticides	Metals	PCBs		
Between the 1950s and the 1960s, a gasoline service station operated at 1252/1256 South First Street on the southeast corner of Hollywood Avenue and South First Street (CCC, 2007). 1252/1256 South First Street is located hydraulically upgradient from the Site. Information regarding the groundwater conditions at 1252 South First Street was not reasonably ascertainable. Laboratory analysis of groundwater samples W-3 and W-5 collected on the Site and downgradient of the former gasoline service station operated at 1252/1256 South First Street did not reveal TPHg, TPHd or VOCs above their respective laboratory-reporting limits (Appendix E).	Potential releases to groundwater of petroleum products containing VOCs that could have migrated beneath the Site	X	X						Based on the lack of TPH and VOCs detected in gr samples collected at the Site, the potential for histc of petroleum hydrocarbons at 1252/1256 South Fir impact groundwater and migrate beneath the Site c represent a recognized environmental condition.

FINDINGS									OPINIONS
History	Known or suspect recognized environmental conditions	Chemicals						Regulatory Closure	Rationale
		TPH	VOCs	SVOCs	Pesticides	Metals	PCBs		
During the 1950s, a gasoline service station operated at 1299 South First Street on the northwest corner of Floyd Street and South First Street (CCC, 2007). 1299 South First Street is located hydraulically upgradient to the Site. Information regarding the groundwater conditions at 1299 South First Street was not reasonably ascertainable. Laboratory analysis of groundwater samples W-3 and W-5 collected in October 2007 on the Site and downgradient of the former gasoline service station operated at 1299 South First Street did not reveal TPHg, TPHd or VOCs above their respective laboratory-reporting limits (Appendix E).	Potential releases to groundwater of petroleum products containing VOCs that could have migrated beneath the Site	X	X						Based on the lack of TPH and VOCs detected in gr samples collected at the Site, the potential for histc of petroleum hydrocarbons at 1299 South First Str groundwater and migrate beneath the Site does not recognized environmental condition.

FINDINGS									OPINIONS
History	Known or suspect recognized environmental conditions	Chemicals						Regulatory Closure	Rationale
		TPH	VOCs	SVOCs	Pesticides	Metals	PCBs		
During the 1950s, a gasoline service station operated at 1303 South First Street on the northeast corner of Floyd Street and South First Street (CCC, 2007). 1303 South First Street is located hydraulically upgradient to the Site. Information regarding the groundwater conditions at 1303 South First Street was not reasonably ascertainable. Laboratory analysis of groundwater samples W-3 and W-5 collected in October 2007 on the Site and downgradient of the former gasoline service station operated at 1303 South First Street did not reveal TPHg, TPHd or VOCs above their respective laboratory-reporting limits (Appendix E).	Potential releases to groundwater of petroleum products containing VOCs that could have migrated beneath the Site	X	X						Based on the lack of TPH and VOCs detected in gr samples collected on the Site, the potential for hist of petroleum hydrocarbons at 1303 South First Str groundwater and migrate beneath the Site does not recognized environmental condition.

FINDINGS										OPINIONS
History	Known or suspect recognized environmental conditions	Chemicals						Regulatory Closure		Rationale
		TPH	VOCs	SVOCs	Pesticides	Metals	PCBs			
During the 1960s, used car lots occupied 1204 to 1299 (northeast side) of South First Street. Products containing VOCs and petroleum hydrocarbons were potentially used, stored and disposed of at 1204 to 1299 South First Street including brake cleaners, automobile parts degreaser solvents and paints. 1204 to 1299 is located hydraulically upgradient to the Site. Information regarding the groundwater conditions beneath 1204 to 1299 South first Street was not reasonably ascertainable.	Potential releases to groundwater of products containing petroleum products and VOCs that could have migrated beneath the Site	X	X							Based on the lack of TPH and VOCs detected in gr samples collected on the Site, the potential for hist to groundwater of petroleum hydrocarbons at 1204 First Street to impact groundwater and migrate ber does not represent a recognized environmental con

FINDINGS									OPINIONS
History	Known or suspect recognized environmental conditions	Chemicals						Regulatory Closure	Rationale
		TPH	VOCs	SVOCs	Pesticides	Metals	PCBs		
Between 1915 and 2007, a gasoline service station has operated at 1098 South First Street (CCC, 2007). In 1984, four USTs were removed from 1098 South First Street. 1098 South First Street is located hydraulically downgradient of the Site. Between 1984 and 1988, laboratory analysis of groundwater samples collected from three monitoring wells, E-2 to E-4, installed at 1098 South First Street revealed the highest concentration of: TPHg at 33,000 ug/l; benzene at 4,800 ug/l; toluene at 6,500 ug/l and xylenes at 8,800 ug/l, in monitoring well E-3 (G-R, 1989). Monitoring well E-3 is located upgradient of the former USTs and downgradient of the Site. In 1991, five additional monitoring wells, S-5 to S-9 were installed at 1098 South First Street. Laboratory analysis of a groundwater sample W-1 collected downgradient of the former gasoline service station and upgradient of the service station at 1098 South First Street in October 2007 did not reveal the presence of TPHg, TPHd, BTEX or other VOCs above their respective laboratory-reporting limits (Appendix E).	Releases of petroleum products to groundwater from service station operations that could have migrated beneath the Site	X	X						Based on the lack of TPH and VOCs detected in gr samples collected on the Site and the downgradien relevant to the Site, the presence of TPH and VOC groundwater at 1098 South First Street does not re recognized environmental condition.

FINDINGS										OPINIONS
History	Known or suspect recognized environmental conditions	Chemicals						Regulatory Closure		Rationale
		TPH	VOCs	SVOCs	Pesticides	Metals	PCBs			
During the 1950s, a gasoline service station operated at 1098 South Second Street on the northeast corner of Keyes Street and South Second Street (CCC, 2007). 1098 South Second Street is located hydraulically downgradient of the Site. Information regarding the groundwater conditions at 1098 South Second Street was not reasonably ascertainable	Potential releases to groundwater of petroleum products containing VOCs that could impact the Site	X	X							Based on its hydraulically downgradient location a TPH and VOCs in groundwater at the Site, potenti groundwater at 1098 South Second Street does not recognized environmental condition to the Site.

FINDINGS									OPINIONS
History	Known or suspect recognized environmental conditions	Chemicals						Regulatory Closure	Rationale
		TPH	VOCs	SVOCs	Pesticides	Metals	PCBs		
In 1990, a release to soil from a leaking UST was discovered at 185 East Humboldt Street. 185 East Humboldt Street is located hydraulically upgradient of the Site. In 1995, the leaking UST was closed by the California Regional Water Quality Control Board - San Francisco Bay Region (Regional Board).	Potential release to groundwater of petroleum hydrocarbons containing VOCs that could have migrated beneath the Site	X	X					X	Based on the case closure by the Regional Board i lack of impacted groundwater at 185 E. Humboldt 1150 South Second Street, the leaking UST at 185 Street does not represent a recognized environmen the Site.

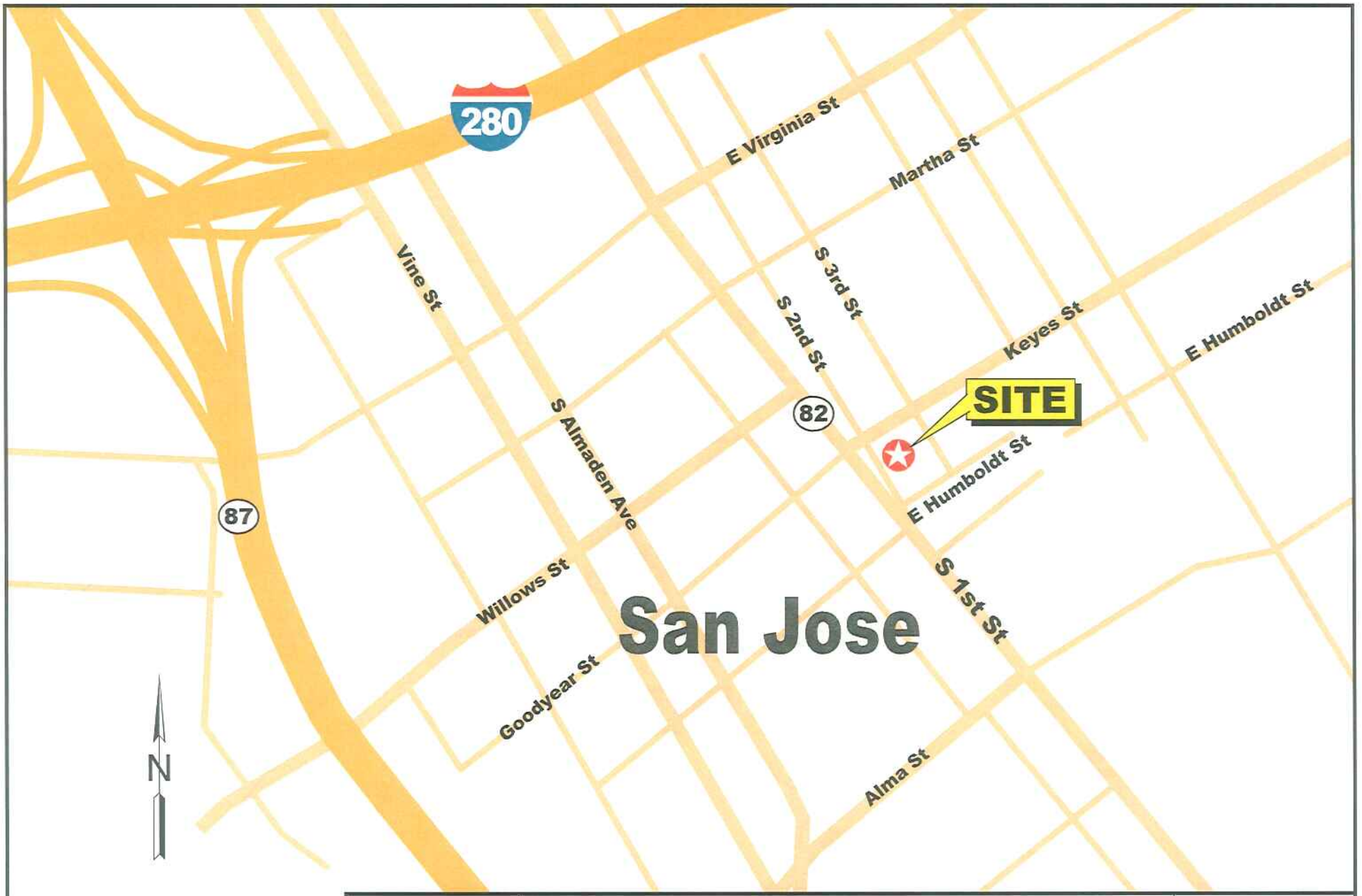

Figure 1-1	**SITE LOCATION MAP**	WEST Environmental Services & Technology
November 2007	1102-1150 Second Street, San Jose, California	

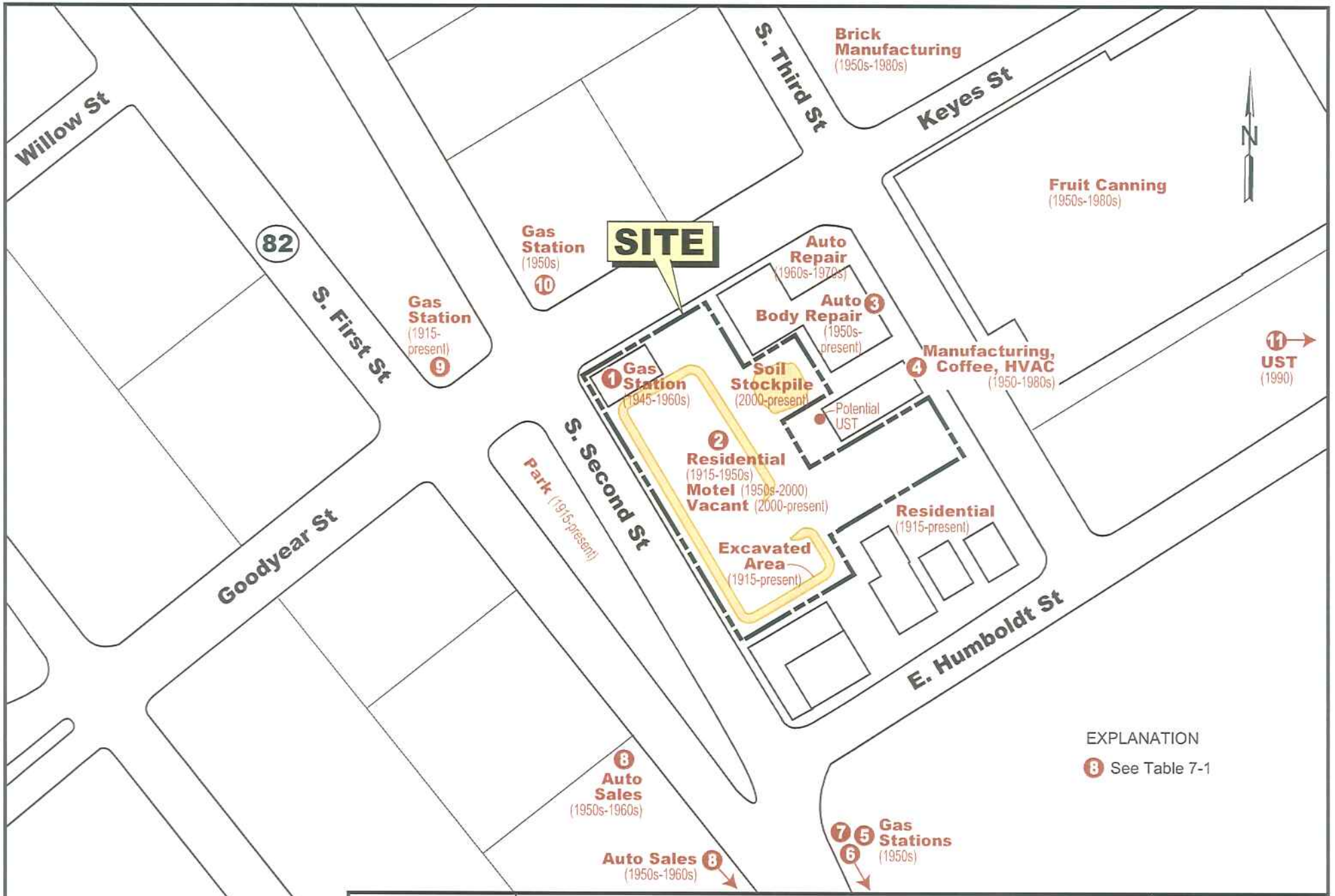

Figure 2-1	**SITE PLAN AND HISTORICAL SITE USE**	WEST Environmental Services & Technology
November 2007	1102-1150 Second Street, San Jose, California	

APPENDIX A

ENVIRONMENTAL RECORDS SOURCES

APPENDIX B

HISTORICAL RECORDS SOURCES

APPENDIX C

SITE PHOTOGRAPHS

APPENDIX D

INTERVIEW DOCUMENTATION

APPENDIX E

PHASE II ENVIRONMENTAL SITE ASSESSMENT FINDINGS

APPENDIX C

NOISE ASSESSMENT

EDWARD L. PACK ASSOCIATES, INC.

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May 19, 2008
Project No. 39-029-2

Mr. Geoff Morgan
First Community Housing
2 North Second Street
Suite 1250
San Jose, CA 95113

Subject: Revised Noise Assessment Study for the Planned "South 2nd Gateway Apartments", South Second Street, San Jose

Dear Mr. Morgan:

This report presents the results of a revised noise assessment study for the planned "South 2nd Gateway Apartments" along South Second Street in San Jose, as shown on the Building Site Plan, Ref. (a). The noise exposures at the site were evaluated against the standards of the City of San Jose Noise Element, Ref. (b), and the State of California Code of Regulations, Title 24, Ref. (c), and the Santa Clara County Airport Land Use Commission (ALUC), Ref. (d). The purpose of this revision was to include the "quiet court" and easterly "panhandle" common open spaces into the noise analysis as the previous "living roof" was not an exterior living area for the original noise analysis, Ref. (e). The analysis of the on-site sound level measurements indicates that the existing noise environment at the site is due primarily to vehicular traffic sources on South First Street, South Second Street, Keyes Street and aircraft operations at Mineta/San Jose International Airport (SJIA). Traffic on South Third Street does not impact the site due to the setback distance of the planned dwelling units from the roadway. The site is outside of the 65 dB CNEL referral boundary of the ALUC, therefore, the project is not referred to the ALUC and the ALUC noise standards are not in effect. The results of the study reveal that the exterior noise exposures in the quiet court and in most of the panhandle common areas will comply with the City of San Jose Noise Element policies. Exterior noise mitigation will not be required. Interior noise exposure excesses will occur and mitigation measures will be required.

Sections I and II of this report contain a summary of our findings and recommendations, respectively. Subsequent sections contain the site, traffic and project descriptions, analyses and evaluations. Attached hereto are Appendices A, B, and C, which include the list of references, descriptions of the applicable standards, definitions of the terminology, descriptions of the acoustical instrumentation used for the field survey, ventilation requirements, general building shell controls, and the on-site noise measurement data and calculation tables.

I. Summary of Findings

The noise assessment results presented in the findings were evaluated against the standards of the City of San Jose Noise Element, which utilizes the Day-Night Level (DNL) descriptor. The Noise Element standards specify an exterior limit of 60 decibels (dB) DNL for residential land use, including common open spaces, impacted by transportation related noise sources. The City of San Jose Noise Element also states that some development sites in the Downtown Core Area, in the vicinity of San Jose International Airport and along major roadways are exposed to noise levels that may not be able to meet the noise standards in the time frame of the General Plan. If the majority of the common open space is exposed to noise at 65 dB DNL or lower, and if the primary noise source is aircraft, the noise requirements for other noise impacted living areas (balconies, patios, etc.) may be waived as it is usually not feasible to reduce aircraft noise at exterior areas. A limit of 45 dB DNL is specified for interior living spaces.

The Title 24 standards, which apply only to multi-family housing, also use the DNL descriptor and specify that when the exterior noise exposures exceed 60 dB DNL at planned dwelling units, an acoustical analysis must be performed to limit interior noise exposures to 45 dB DNL or less.

The Title 24 standards also specify minimum sound insulation ratings for common partitions separating different dwelling units and dwelling units from interior common spaces. The standards specify that common walls and floor/ceiling assemblies must have a design Sound Transmission Class (STC) rating of 50 or higher. In addition, common floor/ceiling assemblies must have a design Impact Insulation Class (IIC) rating of 50. As design details for the interior partitions of the project were not available at the time of this study, an evaluation of the interior partitions has not been made.

A. Exterior Noise Exposures

Table I, on the following page, provides the existing and future exterior noise exposures at the planned building setbacks and exterior living areas from the various noise sources that impact the site. The noise exposures shown are without the application of mitigation measures.

- The exterior noise exposures at the most impacted planned building setback from South First Street and South Second Street and in the B1 unit balconies will be up to 66 and 68 dB DNL under existing and future conditions, respectively. Thus, the noise exposures will be up to 8 dB in excess of the City of San Jose Noise Element standards and the Title 24 criterion.

- The exterior noise exposures at the Residential Terrace will be 67 and 69 dB DNL under existing and future conditions, respectively. These noise exposures include a 6 dB increase for sound reflections within the surrounded space and a 3 dB reduction due to the partial noise shielding provided by the buildings. Thus, the noise exposures will be up to 9 dB in excess of the City of San Jose Noise Element standards.

- The exterior noise exposures at the most impacted planned Residential Balcony at the corner of Keyes Street and South Second Street will be up to 66 and 69 dB DNL under existing and future conditions, respectively. Thus, the noise exposures will be up to 9 dB in excess of the City of San Jose Noise Element standards.

- The exterior noise exposures at the most impacted planned Quiet Court along the easterly portion of the site will be up to 60 and 64 dB DNL under existing and future conditions, respectively. Thus, the noise exposures will be up to 4 dB in excess of the City of San Jose Noise Element standards, but will be within the Noise Element policy range of acceptability.

TABLE I

Existing and Future Exterior Noise Exposures, dB DNL

Westerly Façade and Balconies of B1 Units	Distance to Source	Existing Noise Exposure	Future Noise Exposure
South First St.	130 ft.	62	64
South Second St.	40 ft.	60	61
Aircraft	--	61	64
TOTAL NOISE EXPOSURE		**66**	**68**
Residential Balcony	Distance to Source	Existing Noise Exposure	Future Noise Exposure
South First St.	130 ft.	61	63
South Second St.	40 ft.	58	59
Keyes St.	44 ft.	60	64
Aircraft	--	61	64
TOTAL NOISE EXPOSURE		**66**	**69**
Easterly Façade	Distance to Source	Existing Noise Exposure	Future Noise Exposure
South Third St.	215 ft.	48	49
JTR Distributors	280 ft.	47	46
Aircraft	--	59	62
TOTAL NOISE EXPOSURE		**60**	**62**
Residential Terrace	Distance to Source	Existing Noise Exposure	Future Noise Exposure
South First St.	185	60	62
South Second St.	90	55	56
Aircraft	--	61	64
TOTAL NOISE EXPOSURE		**67**	**69**
Northerly Façade	Distance to Source	Existing Noise Exposure	Future Noise Exposure
Keyes St.	42 ft.	63	67
S. 1st, S. 2nd	290 ft., 170 ft.	55	56
Aircraft	--	61	64
TOTAL NOISE EXPOSURE		**65**	**69**
Quiet Court	Distance to Source	Existing Noise Exposures	Future Noise Exposures
Keyes St.	100 ft.	54	58
Aircraft		59	62
Reinegger's Auto	52 ft.	47	47
TOTAL NOISE EXPOSURE		**60**	**64**
Panhandle Common Area	Distance to Source	Existing Noise Exposures	Future Noise Exposures
S. 3rd St.	40-185 ft.	49-59	50-60
JTR Distributors	105-250 ft.	46-56	45-55
Aircraft	1,450-1,530 ft.	43-56	46-59
TOTAL NOISE EXPOSURE		**51-64**	**52-66**

- The exterior noise exposures at the most impacted planned common area in the "panhandle" of the site that extends out to South Third Street will range from 51 to 64 dB DNL under existing traffic conditions and from 52-66 dB DNL under future traffic conditions. The noisier portion of this area is closer to South Third Street. The future 65 dB DNL contour will lie 35 ft. from the South Third Street curb. Thus, the noise exposures will be up to 6 dB in excess of the City of San Jose Noise Element standards, but will be within the Noise Element policy range of acceptability.

- The exterior noise exposures at the most impacted planned building setback from Keyes Street will be up to 65 and 69 dB DNL under existing and future conditions, respectively. Thus, the noise exposures will be up to 9 dB in excess of the Title 24 criterion.

- The exterior noise exposures at the most impacted planned building setback from South Third Street will be 60 and 62 dB DNL under existing and future conditions, respectively. The noise exposures at units facing east will be due primarily to aircraft sources. Thus, the noise exposures will be up to 2 dB in excess of the Title 24 criterion.

- JTR Distributors generates an estimated noise exposure of 47 dB DNL at the most impacted planned dwelling units. Thus, the noise exposure is within the 55 dB DNL limit of the City of San Jose Noise Element for non-transportation noise sources.

- Reinegger Frame & Wheel generates an estimated noise exposure of 47 dB DNL at the most impacted planned dwelling units. Thus, the noise exposure is within the 55 dB DNL limit of the City of San Jose Noise Element for non-transportation noise sources.

The exterior noise exposures exceed the 60 dB DNL criterion of Title 24. An acoustical analysis is required by the State Building Code. This report is intended to satisfy that requirement.

B. Interior Noise Exposures

- The interior noise exposures in the most impacted living spaces closest to South First Street and South Second Street will be up to 51 and 53 dB DNL under existing and future traffic conditions, respectively. Thus, the noise exposures will be up to 8 dB in excess of the standards of the City of San Jose Noise Element and Title 24.

- The interior noise exposures in the most impacted living spaces closest to Keyes Street will be up to 50 and 54 dB DNL under existing and future conditions, respectively. Thus, the noise exposures will be up to 9 dB in excess of the standards of the City of San Jose Noise Element and Title 24.

- The interior noise exposures in the most impacted living spaces closest to South Third Street will be 45 and 47 dB DNL under existing and future conditions, respectively. The noise exposures at units facing east will be due primarily to aircraft sources. Thus, the noise exposures will be up to 2 dB in excess of the standards of the City of San Jose Noise Element and Title 24.

As shown above, exterior and interior noise exposure excesses will occur. Mitigation measures will be required for the interior spaces. Mitigation for the exterior spaces will be imposed per the City of San Jose Noise Element policies. The recommended measures are described in Section II, below.

II. Recommendations

Compliance with the 60 dB DNL standard of the City of San Jose Noise Element cannot be achieved at all of the exterior living areas of the project as aircraft flyovers are a primary source of noise at the site. Noise control barriers at balconies and terraces are not effective against aircraft noise.

Reducing traffic noise at the balconies by as much as practical, the total noise reduction would be 3-4 decibels. The resulting noise exposures would be up to 66 dB DNL in the most impacted balconies and terrace.

Should acoustical balcony, deck or terrace railings be required, the following construction methods shall be followed:

- Construct 42" high acoustically-effective railings at all balconies, decks and terraces of the project. The railing height is in reference to the nearest balcony, deck or terrace floor elevation.

To achieve an acoustically-effective balcony, deck or terrace railing must be constructed air-tight, i.e., without cracks, gaps or other openings, and must provide for long term durability, including the balcony floor. The railings can be constructed of masonry, wood, concrete, stucco, metal or a combination thereof, and must have minimum surface weight of 1.5 lbs. per sq. ft. If wood materials are used, homogeneous sheet materials are preferable to conventional wood fencing as the latter has a tendency to warp and form openings with age. However, high quality air-tight tongue-and-groove, board and batten or shiplap construction can be used provided that the construction is air-tight and the minimum surface weight is met. Translucent materials, such as glass, Lexan or Plexiglas, may be incorporated into the barriers to provide for light and views, however, they must have a minimum thickness of 3/16" to meet the minimum surface weight requirement. Drainage openings shall be kept to a minimum size and should face away from the noise source. Downspouts and scuppers are preferable over sheet draining. All connections with posts, pilasters and the building shell must be sealed air-tight.

B. Interior Noise Controls

To achieve interior noise exposures for compliance with the 45 dB DNL standards of the City of San Jose Noise Element and Title 24, sound control windows will be required. In addition, general construction measures affecting the building shell are also recommended, as described in Appendix B.

- Maintain closed at all times all and glass doors of living spaces. At these living spaces with a direct of side view of South 1st Street, South 2nd Street or Keyes Street, install windows and glass doors rated minimum Sound Transmission Class (STC) 29. All other noise impacted living spaces may have any type of glass, i.e., there is no specific STC rating requirement.

- Provide some type of mechanical ventilation for all living spaces that have a closed window/glass door requirement.

All remaining windows of the project, including bathroom windows, may be fitted with any type of glass and may be kept open as desired, with the exception of bathroom windows that are in integral part of a noise impacted living space and not separated by a closeable door.

All windows must be of good quality and provide tight seals to prevent sound infiltration. To achieve an acoustically-effective window construction, the operable window panels must form an air-tight seal when in the closed position. In addition, the window and door frames must be caulked to the wall opening around their entire perimeter with a non-hardening caulking compound or acoustical sealant.

When windows are maintained closed for noise control, they are to be operable, as the requirement does not imply a "fixed" condition. Also, under the closed window requirement some type of mechanical ventilation should be provided to assure a habitable environment, as specified by the Uniform Building Code (UBC) and described in Appendix B. In addition, the ventilation methods or equipment shall not compromise the acoustical integrity of the building shell.

Please be aware that many dual-pane window assemblies have inherent noise reduction problems in the traffic and railroad noise frequency spectra due to resonance that occurs within the air space between the window lites, and the noise reduction capabilities vary from manufacturer to manufacturer. Therefore, the acoustical test report of all sound rated windows and doors should be reviewed by a qualified acoustician to ensure that the chosen windows and doors will adequately reduce traffic and railroad noise to acceptable levels.

The implementation of the above recommended measures will reduce excess noise exposures to achieve compliance with the interior standards of the City of San Jose Noise Element and Title 24.

III. Site, Traffic and Project Descriptions

The proposed development site is located at 1140 South Second Street at the northeast corner of South Second Street and Keyes Street in San Jose. The site is mostly vacant, relatively flat and approximately at-grade with the adjacent roadways and land uses. However, there is a Pizza Hut restaurant on the site at the northwest corner. Surrounding land uses include a 2-story commercial building, church and single-family residences adjacent to the south, a vacant building and Reinegger Wheel & Frame adjacent to the east, JTR Distributing is across South Third Street to the east, Magana's Beauty Supply adjacent to the north, and South Second Street and South First Street are to the west.

The primary sources of noise at the site are traffic on South First Street, South Second Street, Keyes Street and aircraft operations. South First Street carries an Average Daily Traffic (ADT) volume of 21,250 vehicles, South Second Street carries an ADT of 8,750 vehicles, South Third Street carries an ADT of 6,250 vehicles and Keyes Street carries an ADT of 15,000 vehicles, as reported by the City of San Jose, Ref. (f).

The third quarter noise contour map of Mineta/San Jose International Airport reveals that the project site is located approximately at the 61 dB CNEL (DNL) noise contour, Ref. (g).

The planned project includes the construction of 6-story mixed used project with five floors of residential apartment over a two floors of parking and retail uses. A common residential balcony will be located at the northwest corner of the building on the first residential floor. A common residential terrace will be located on the first residential floor facing South First Street and South Second Street, but will be setback from the streets beyond the entry courtyard. A common open space area designated as the "Quiet Court" will be located at the former living roof area. A common open space area will be located on the ground floor of the project along the entry driveway in the "panhandle" of the site that extends out to South Third Street.

IV. Analysis of the Noise Levels

A. Existing Noise Levels

To determine the existing noise environment at the site, continuous recordings of the sound levels were made at three locations. Location 1 was along the westerly property line 40 ft. from the centerline of South Second Street and 135 ft. from the centerline of South First Street. Location 2 was 65 ft. from the centerline South Third Street. Location 3 was 100 ft. from the centerline of Keyes Street. The measurements were made on August 15-16, 2006 for a continuous period of 24 hours at each location.

The noise level data were acquired using Larson-Davis Model 812 Precision Integrating Sound Level Meters, which yield, by direct read-out, a series of descriptors of the sound levels versus time, as described in Appendix B. The measured descriptors include the L_1, L_{10}, L_{50}, and L_{90}, i.e., those levels exceeded for 1%, 10%, 50%, and 90% of the time. Also measured were the maximum and minimum levels and the continuous equivalent-energy levels (L_{eq}), which are used to calculate the DNL. The results of the sound measurements are shown in Appendix C.

The results of the field survey revealed that the L_{eq}'s at Location 1, 135 ft. from the centerline of South First Street and 40 ft. from the centerline of South Second Street ranged from 61.3 to 65.3 dBA during the daytime and from 52.8 to 63.4 dBA at night. The L_{eq}'s at Location 2, 65 ft. from the centerline of South Third Street, ranged from 58.0 to 62.5 dBA during the daytime and from 46.4 to 61.0 dBA at night. The L_{eq}'s at Location 3, 100 ft. from the centerline of Keyes Street, ranged from 59.7 to 65.0 dBA during the daytime and from 49.9 to 60.1 dBA at night.

In addition, a short-term 1 hour noise measurement was made at the property line contiguous with Reinegger Wheel & Frame. The hourly average noise level was measured to be 51.0 dBA L_{eq}. This measurement location was unaffected by traffic noise as there is a large dirt mound from previous excavation of the site that shields this area from traffic noise. The measurement hour would be considered a typically busy hour with the sounds from air tools, hammering and other auto repair related noise audible at the site, but not distinctly loud.

Traffic noise dissipate at the rate of 3 to 6 dB for each doubling of the distance from the source (centerline of the roadway) to the receiver. Thus, locations on the site at greater distances from the roadways will have lower noise levels.

Vehicular traffic noise contain wide spectra of frequency components (from 100 to 10,000 Hertz), which are associated with engine, tire, drive train, exhaust and other sources. The frequency components are centered primarily in the 500 and 1,000 Hz octave bands and were used in determining the noise control measures recommended for this project.

B. Future Noise Levels

The future traffic volume for South First Street is predicted to increase from the existing 21,250 ADT to up to 35,00 ADT for future year 2020. The future traffic volume for South Second Street is predicted to increase from the existing 8,750 ADT to up to 10,00 ADT for future year 2020. The future traffic volume for South Third Street is predicted to increase from the existing 6,250 ADT to up to 8,750 ADT for future year 2020. The future traffic volume for Keyes Street is predicted to increase from the existing 15,000 ADT to up to 37,500 ADT for future year 2020, as reported by the City of San Jose, Ref. (f). These increases in traffic volume result in 2, 1, 1 and 4 dB increases in the South First Street, South Second Street, South Third Street and Keyes Street traffic noise levels, respectively.

The future noise environment created by aircraft operations at SJIA are shown on the airport noise contour maps developed for the San Jose International Airport Master Plan Environmental Impact Report, Ref. (h). A review of the noise contour map for the 2010 worst-case scenario indicates that the aircraft noise exposure over the site is expected to increase from the existing 61 dB CNEL (DNL) to 64 dB CNEL (DNL).

Future operations at JTR Distributing and at Reinegger Wheel & Frame are unknown at this time. For the purposes of this study, we are assuming that future operations will be similar to present levels.

V. Evaluation of the Noise Exposures

A. Exterior Noise Exposures

To evaluate the on-site noise exposures against the City of San Jose Noise Element standards and the Title 24 criterion, the DNL's for the survey locations were calculated by decibel averaging of the L_{eq}'s as they apply to the daily time periods of the DNL index. The DNL is a 24-hour noise descriptor that uses the measured L_{eq} values to calculate a 24-hour time-weighted average noise exposure. The formula used to calculate the DNL is described in Appendix B. Adjustments were made to the measured noise levels to account for the differences in setback locations and elevations from the measurement locations using methods established by the Highway Research Board, Ref. (i).

The results of the calculations indicate that the exterior noise exposure at the measurement location, planned minimum building setback and B1 unit balconies, 135 ft. from the centerline of South First Street and 40 ft. from the centerline of South Second Street, is 66 dB DNL. As the aircraft noise exposure is 61 dB CNEL (DNL), the remaining 65 dB DNL is due to traffic. Computer modeling of South First Street and South Second Street traffic noise yields noise exposures of 62 dB DNL for South First Street and 60 dB DNL for South Second Street. Under future conditions, the noise exposures are predicted to increase to 64 dB CNEL (DNL) for aircraft, 64 dB DNL for South First Street traffic, and 61 dB DNL for South Second Street traffic. The total future noise exposure was calculated to be 68 dB DNL, as shown by the following expression:

$$68 \text{ dB DNL} = 10\log_{10}(10^{(64/10)} + 10^{(64/10)} + 10^{(61/10)}).$$

Thus, the noise exposures will be up to 8 dB in excess of the City of San Jose Noise Element standards for the balconies and up to 8 dB in excess of the Title 24 criterion.

The noise exposures at the Residential Terrace facing South First Street and South Second Street, 185 ft. from the centerline of South First Street and 90 ft. from the centerline of South Second Street, were calculated to be 67 and 69 dB DNL under existing and future conditions, respectively. The noise exposures include a 6 dB upward adjustment to the noise exposures to account for sound reflections off of the building and a 3 dB downward adjustment to account for noise shielding provided by portions of the project structure.

The noise exposure at measurement Location 2, 65 ft. from the centerline of South Third Street, was calculated to be 63 dB DNL. As the aircraft noise exposure is 61 dB CNEL (DNL) and the noise exposure due to JTR Distributing is 52 dB DNL, the remaining 56 dB DNL is due to traffic. At the planned minimum building setback of 230 ft. from the centerline of South Third Street and 295 ft. from JRT Distributing, the noise exposures at the building façade facing east were calculated to be 48 dB DNL from South Third Street traffic, 47 dB DNL from JTR Distributing and 59 dB DNL from aircraft. Note that the easterly façade views away from aircraft flyovers. The total noise exposure was calculated to be 60 dB DNL. Under future conditions, the noise exposures are expected to increase to 49 dB DNL for South Third Street traffic, 62 dB CNEL (DNL) for aircraft and the noise exposure from JTR Distributing is expected to remain unchanged. The total future noise exposure at unit facing east was calculated to be 62 dB DNL. The noise exposures at the east facing units will be up to 2 dB in excess of the Title 24 criterion.

The noise exposure generated by Reinegger Wheel & Frame was calculated by applying the measured hourly L_{eq} of 51.0 dBA to the DNL formula for an operating period of 7:00 a.m. to 5:00 p.m. The noise exposure was calculated to be 47 dB DNL. Thus, the noise exposure will be within the 55 dB DNL limit of the City of San Jose Noise Element for non-transportation related noise sources.

The noise exposure at measurement Location 3, 100 ft. from the centerline of Keyes Street, was calculated to be 63 dB DNL. As the aircraft noise exposure is 61 dB CNEL (DNL), the noise exposure from South First Street is 52 dB DNL, the noise exposure from South Second Street is 51 dB DNL, remaining 58 dB DNL is due to Keyes Street traffic.

At the planned minimum building setback of 42 ft. from the centerline of Keyes Street, the noise exposures were calculated to be 63 dB DNL from Keyes Street, 61 dB DNL from aircraft, 52 dB DNL from South First Street traffic and 51 dB DNL from South Second Street traffic. The total noise exposure under existing conditions was calculated to be 65 dB DNL. Under future conditions, the noise exposures are expected to increase to 67 dB DNL for Keyes Street traffic, 64 dB DNL from aircraft, 54 dB DNL from South First Street traffic and 52 dB DNL from South Second Street traffic. The total future noise exposure at the planned minimum setback of units along Keyes Street was calculated to be 69 dB DNL. Thus, the noise exposures will be up to 9 dB in excess of the Title 24 criterion.

The noise exposures in the quiet court will range from 50 dB DNL to 60 dB DNL under existing conditions and from 54 dB DNL to 64 dB DNL under future conditions. The noisier area of the quiet court will be at the most northeasterly corner and the quietest area will be in the northwesterly corner.

At the Residential Balcony at the northwest corner of the building, the noise exposures were calculated to the 61 dB DNL from aircraft, 59 dB DNL from South First Street traffic, 57 dB DNL from South Second Street traffic and 60 dB DNL from Keyes Street traffic. The total noise exposure in the Residential Balcony was calculated to be 66 dB DNL. Under future conditions, the noise exposures were calculated to be 64 dB DNL from aircraft, 61 dB DNL from South First Street traffic, 58 dB DNL from South Second Street traffic and 64 dB DNL from Keyes Street traffic. The total noise exposure will be 69 dB DNL. Note that the traffic noise exposures at the intersection reduce by 3 decibels compared to the noise exposures at other areas of the site along the respective roadways. The noise exposures in the Residential Balcony will be up to 9 dB in excess of the City of San Jose Noise Element standards.

B. Interior Noise Exposures

To evaluate the interior noise exposures in project living spaces, a 15 dB reduction was applied to the exterior noise exposure to represent the attenuation provided by the building shell under *annual-average* conditions. The *annual-average* condition assumes that windows have single-strength (3/32") glass and are kept open up to 50 % of the time for ventilation.

The interior noise exposures in the most impacted living spaces along South First Street and South Second Street will be up to 51 and 53 dB DNL under existing and future conditions, respectively. Thus, the noise exposures will be up to 8 dB in excess of the City of San Jose Noise Element and Title 24 standards.

The interior noise exposures in the most impacted living spaces facing east toward South Third Street will be up to 45 and 47 dB DNL under existing and future conditions, respectively. Thus, the noise exposures will be up to 2 dB in excess of the City of San Jose Noise Element and Title 24 standards.

The interior noise exposures in the most impacted living spaces along Keyes Street will be up to 50 and 54 dB DNL under existing and future conditions, respectively. Thus, the noise exposures will be up to 9 dB in excess of the City of San Jose Noise Element and Title 24 standards.

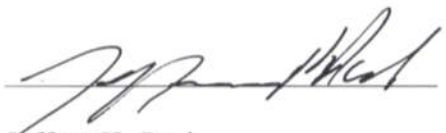
As shown by the above evaluations, exterior and interior noise exposures excesses will occur. Mitigation measures will be required for the interior spaces. Mitigation measures for the exterior spaces will be dependent upon the determinations of the City of San Jose Planning Department. Mitigation measure recommendations are described in Section II of this report.

This report presents the results of a noise assessment study for the planned "South 2nd Gateway Apartments" at 1140 South Second Street in San Jose. The study findings and recommendations for present conditions are based on field measurements and other data and are correct to the best of our knowledge. Future noise level predictions were based upon information provided by the City of San Jose. Significant changes in future traffic volumes, aircraft operations, or changes in speed limits, motor vehicle or aircraft technology, noise regulations, or other changes beyond our control may produce long-range noise results different from our estimates.

If you need any additional information or would like an elaboration on this report, please call me.

Sincerely,

EDWARD L. PACK ASSOC., INC.



Jeffrey K. Pack
President

Attachments: Appendices A, B, and C

APPENDIX A

References

(a) Building Site Plan, South 2nd Gateway Apartments, by Rob Wellington Quigley Architects, March 28, 2008

(b) San Jose 2020 General Plan, Focus on the Future, City of San Jose, Department of City Planning and Building, August 16, 1994

(c) California Code of Regulations, Title 24, Part II, "Sound Transmission Control", Revised 1989

(d) "Land Use Plan for Areas Surrounding Airports in Santa Clara County", Draft III, Adopted by the Airport Land Use Commission, 1991

(e) "Noise Assessment Study for the Planned 'South 2nd Gateway Apartments', South Second Street, San Jose", by Edward L. Pack Associates, Inc., Project No. 39-029, June 28, 2007

(f) Information on Existing and Future Traffic Volumes Provided by Mr. Casey Hirasaki, City of San Jose Transportation Planning Department by email to Edward L. Pack Associates, Inc., May 30, 2007

(g) 65 CNEL Third Quarter Noise Monitoring Report, September 30, 2006 http://www.sjc.org/community/maps/4q06map.pdf

(h) 65 dB CNEL Contour for 2010 Master Plan with Amendment, http://www.sjc.org/community/maps/2010_SEIRJET_65.pdf

(i) Highway Research Board, "Highway Noise - A Design Guide for Highway Engineers", Report 117, 1971

APPENDIX B

Noise Standards, Terminology, Instrumentation Ventilation Requirements, and Building Shell Controls

1. Noise Standards

A. City of San Jose "Noise Element" Standards

The noise section of the San Jose 2020 General Plan, Focus on the Future, adopted August 16, 1994 identifies an exterior limit of 60 dB Day-Night Level (DNL) at outdoor living or recreation areas of residential developments. This standard applies at the property line of residential areas impacted by transportation related noise sources. For off-site noise sources, such as commercial and industrial operations, an exterior limit of 55 dB DNL for residential areas is specified. A long-term goal of 55 dB DNL from transportation sources anticipates future reductions in transportation noise due to improvements in design, such as quieter engines and improved muffler systems.

The City of San Jose Noise Element also states that some development sites in the Downtown Core Area, in the vicinity of San Jose International Airport and along major roadways are exposed to noise levels that may not be able to meet the noise standards in the time frame of the General Plan.

For commercial uses whose exterior noise exposure is 76 dB DNL or lower, the interior is limited to 45 dB DNL.

At interior living spaces of residential areas, the standards established an interior limit of 45 dB DNL for noise levels due to exterior sources.

B. Title 24 Noise Standards

The California Code of Regulations, "Sound Transmission Control", Title 24, Part II, applies to all new multi-family dwellings including condominiums, townhouses, apartments, hotels and motels. The standards, which utilize the Day-Night Level (DNL) descriptor, establish an exterior reference or criterion level of 60 dB DNL, and specify that multi-family buildings to be located within an annual DNL zone of 60 dB or greater require an acoustical analysis. The analysis report must show that the planned buildings provide adequate attenuation to limit intruding noise from exterior sources to an annual DNL of 45 dB or less in any habitable space. The Community Noise Equivalent Level (CNEL) descriptor, which is similar to the DNL, may also be used, as the DNL and CNEL are considered to be equivalent.

The Title 24 standards also establish minimum sound insulation requirements for interior partitions separating different dwelling units from each other and dwelling units from common spaces such as garages, corridors, equipment rooms, etc. The common interior walls and floor/ceiling assemblies must achieve a minimum Sound Transmission Class (STC) rating of 50 for airborne noise. Common floor/ceiling assemblies must achieve an Impact Insulation Class (IIC) rating of 50 for impact noise. These ratings are based on laboratory tested partitions. Field tested partitions must achieve ratings of NIC and FIIC 45.

2. Terminology

A. Statistical Noise Levels

Due to the fluctuating character of urban traffic noise, statistical procedures are needed to provide an adequate description of the environment. A series of statistical descriptors have been developed which represent the noise levels exceeded a given percentage of the time. These descriptors are obtained by direct readout of the Community Noise Analyzer. Some of the statistical levels used to describe community noise are defined as follows:

L_1 - A noise level exceeded for 1% of the time.

L_{10} - A noise level exceeded for 10% of the time, considered to be an "intrusive" level.

L_{50} - The noise level exceeded 50% of the time representing an "average" sound level.

L_{90} - The noise level exceeded 90 % of the time, designated as a "background" noise level.

L_{eq} - The continuous equivalent-energy level is that level of a steady-state noise having the same sound energy as a given time-varying noise. The L_{eq} represents the decibel level of the time-averaged value of sound energy or sound pressure squared and is used to calculate the DNL and CNEL.

B. Day-Night Level (DNL)

Noise levels utilized in the standards are described in terms of the Day-Night Level (DNL). The DNL rating is determined by the cumulative noise exposures occurring over a 24-hour day in terms of A-Weighted sound energy. The 24-hour day is divided into two subperiods for the DNL index, i.e., the daytime period from 7:00 a.m. to 10:00 p.m., and the nighttime period from 10:00 p.m. to 7:00 a.m. A 10 dB weighting factor is applied (added) to the noise levels occurring during the nighttime period to account for the greater sensitivity of people to noise during these hours. The DNL is calculated from the measured L_{eq} in accordance with the following mathematical formula:

$$DNL = [(L_d+10\log_{10}15) \,\&\, (L_n+10+10\log_{10}9)] - 10\log_{10}24$$

Where:

L_d = L_{eq} for the daytime (7:00 a.m. to 10:00 p.m.)
L_n = L_{eq} for the nighttime (10:00 p.m. to 7:00 a.m.)
24 - indicates the 24-hour period
& - denotes decibel addition.

C. A-Weighted Sound Level

The decibel measure of the sound level utilizing the "A" weighted network of a sound level meter is referred to as "dBA". The "A" weighting is the accepted standard weighting system used when noise is measured and recorded for the purpose of determining total noise levels and conducting statistical analyses of the environment so that the output correlates well with the response of the human ear.

3. Instrumentation

The on-site field measurement data were acquired by the use of one or more of the precision acoustical instruments shown below. The acoustical instrumentation provides a direct readout of the L exceedance statistical levels including the equivalent-energy level (L_{eq}). Input to the meters was provided by a microphone extended to a height of 5 ft. above the ground. The meter conforms to ANSI S1.4 for Type 1 instruments. The "A" weighting network and the "Fast" response setting of the meter were used in conformance with the applicable ISO and IEC standards. All instrumentation was acoustically calibrated before and after field tests to assure accuracy.

Bruel & Kjaer 2231 Precision Integrating Sound Level Meter
Larson Davis LDL 812 Precision Integrating Sound Level Meter
Larson Davis 2900 Real Time Analyzer

4. Ventilation Requirements

Ventilation requirements to be applied when windows are maintained closed for noise control are specified in the Uniform Building Code (UBC), 1997 edition, Section 12.03.3 as follows:

> "In lieu of required exterior openings for natural ventilation, a mechanical ventilating system may be provided. Such system shall be capable of providing two air changes per hour in guest rooms, dormitories, habitable rooms, and in public corridors with a minimum of 15 cubic feet per minute (7L/s) of outside air per occupant during such time as the building is occupied."

Based on our previous experience, a "summer switch" on the furnace fan is normally considered acceptable as a ventilation system by FHA and other agencies. Air-conditioning is also an acceptable system.

5. Building Shell Controls

The following additional precautionary measures are required to assure the greatest potential for exterior-to-interior noise attenuation by the recommended mitigation measures. These measures apply at those units where closed windows are required:

- Unshielded entry doors having a direct or side orientation toward the primary noise source must be 1-5/8" or 1-3/4" thick, insulated metal or solid-core wood construction with effective weather seals around the full perimeter. Mail slots should not be used in these doors or in the wall of a living space, as a significant noise leakage can occur through them.

- If any penetrations in the building shell are required for vents, piping, conduit, etc., sound leakage around these penetrations can be controlled by sealing all cracks and clearance spaces with a non-hardening caulking compound.

- Fireplaces should be provided with tight-fitting dampers.

APPENDIX C

On-Site Measurement Data and Calculation Tables

DNL CALCULATIONS

CLIENT: FIRST COMMUNITY HOUSING
FILE: 39-029
PROJECT: SOUTH 2nd STREET APARTMENTS
DATE: 5/16-17/2007
SOURCE: S. 1st./S. 2nd Sts, S. 3rd St., Keyes St.

LOCATION 1 S. 1st St., S. 2nd St.
Dist. To Source 135 ft., 40 ft.

TIME	Leq	10^Leq/10		
7:00 AM	63.8	2398832.9		
8:00 AM	63.5	2238721.1		
9:00 AM	61.7	1479108.4		
10:00 AM	61.3	1348962.9		
11:00 AM	62.4	1737800.8		
12:00 PM	61.8	1513561.2		
1:00 PM	62.5	1778279.4		
2:00 PM	62.8	1905460.7		
3:00 PM	64.9	3090295.4		
4:00 PM	65.3	3388441.6		
5:00 PM	64.8	3019951.7		
6:00 PM	63.2	2089296.1		
7:00 PM	64.0	2511886.4		
8:00 PM	64.1	2570395.8		
9:00 PM	62.2	1659586.9	SUM=	32730582
10:00 PM	60.4	1096478.2	Ld=	63.4
11:00 PM	58.5	707945.8		
12:00 AM	56.1	407380.3		
1:00 AM	56.5	446683.6		
2:00 AM	53.1	204173.8		
3:00 AM	52.8	190546.1		
4:00 AM	55.6	363078.1		
5:00 AM	60.0	1000000.0		
6:00 AM	63.4	2187761.6	SUM=	6604047
			Ld=	58.7

Daytime Level= 75.2
Nighttime Level= 78.2
DNL= 66
24-Hour Leq= 62.1

LOCATION 2 S. 3rd St.
Dist. To Source 65 ft.

TIME	Leq	10^Leq/10		
7:00 AM	62.5	1778279.4		
8:00 AM	61.9	1548816.6		
9:00 AM	61.4	1380384.3		
10:00 AM	59.9	977237.2		
11:00 AM	61.3	1348962.9		
12:00 PM	58.7	741310.2		
1:00 PM	59.3	851138.0		
2:00 PM	60.3	1071519.3		
3:00 PM	65.1	3235936.6		
4:00 PM	61.3	1348962.9		
5:00 PM	60.9	1230268.8		
6:00 PM	58.0	630957.3		
7:00 PM	59.9	977237.2		
8:00 PM	59.9	977237.2		
9:00 PM	59.2	831763.8	SUM=	18930012
10:00 PM	55.5	354813.4	Ld=	61.0
11:00 PM	52.5	177827.9		
12:00 AM	48.3	67608.3		
1:00 AM	48.6	72443.6		
2:00 AM	46.5	44668.4		
3:00 AM	46.4	43651.6		
4:00 AM	55.3	338844.2		
5:00 AM	56.9	489778.8		
6:00 AM	61.0	1258925.4	SUM=	2848562
			Ld=	55.0

Daytime Level= 72.8
Nighttime Level= 74.5
DNL= 63
24-Hour Leq= 59.6

DNL CALCULATIONS

CLIENT: FIRST COMMUNITY HOUSING
FILE: 39-029
PROJECT: SOUTH 2nd STREET APARTMENTS
DATE: 5/16-17/2007
SOURCE: S. 1st./S. 2nd Sts, S. 3rd St., Keyes St.

LOCATION 3	Keyes St.			
Dist. To Source	100 ft.			
TIME	Leq	10^Leq/10		
7:00 AM	60.4	1096478.2		
8:00 AM	61.8	1513561.2		
9:00 AM	60.5	1122018.5		
10:00 AM	60.9	1230268.8		
11:00 AM	60.7	1174897.6		
12:00 PM	59.7	933254.3		
1:00 PM	61.0	1258925.4		
2:00 PM	60.2	1047128.5		
3:00 PM	62.1	1621810.1		
4:00 PM	65.0	3162277.7		
5:00 PM	62.7	1862087.1		
6:00 PM	59.9	977237.2		
7:00 PM	61.6	1445439.8		
8:00 PM	62.3	1698243.7		
9:00 PM	62.9	1949844.6	SUM=	22093473
10:00 PM	57.4	549540.9	Ld=	61.7
11:00 PM	55.2	331131.1		
12:00 AM	53.5	223872.1		
1:00 AM	52.2	165958.7		
2:00 AM	52.1	162181.0		
3:00 AM	49.9	97723.7		
4:00 AM	50.0	100000.0		
5:00 AM	56.8	478630.1		
6:00 AM	60.1	1023293.0	SUM=	3132331
			Ld=	55.4
	Daytime Level=	73.5		
	Nighttime Level=	74.9		
	DNL=	**63**		
	24-Hour Leq=	60.2		

APPENDIX D

TRAFFIC ANALYSIS & PARKING STUDY

Second & Keyes Streets
Mixed-Use Development

Transportation Impact Analysis

Prepared for:

First Community Housing

Prepared by:

HEXAGON TRANSPORTATION CONSULTANTS, INC.

September 7, 2007

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Second & Keyes TIA (9-07-07).doc

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Executive Summary

This report presents the results of the traffic impact analysis conducted for the proposed Second and Keyes Streets mixed-use development in San Jose, California. The project site is currently vacant and is bounded by Second Street to the west, Keyes Street to the north, Third Street to the east, and Humboldt Street to the south. The project as proposed would consist of the construction of 143 studio apartments and 11,500 s.f. of retail space. Access to the site would be provided via driveways along Second Street, Keyes Street, and Third Street. Parking for the retail component of the development would be provided by an at-grade parking garage, while residential parking would be provided below grade.

The potential impacts of the project were evaluated in accordance with the standards set forth by the City of San Jose level of service policy and the Santa Clara Valley Transportation (VTA) Congestion Management Program (CMP). The study included an analysis of AM and PM peak-hour traffic conditions for seven signalized intersections. The study also includes an operations analysis, based on vehicle-storage requirements at selected intersection locations. Freeway level of service analysis was not performed since project trips on freeway segments would not be greater than one percent of the capacity of the segments.

Project Trip Generation

The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. The recommended trip generation rates for use in the City of San Jose are detailed in *Interim Guidelines for Traffic Impact Analysis of Land Use Developments*, 1994. Based on the rates recommended by the City of San Jose along with reductions for retail pass-by-trips and the mixed-use nature of the proposed project, it is estimated that the proposed mixed-use development would generate 1,318 daily trips, with 93 trips occurring during the AM peak hour and 106 trips during the PM peak hour. Using the specified inbound/outbound splits recommended by the City of San Jose, the project would generate 35 inbound trips and 58 outbound trips during the AM peak hour and 66 inbound and 40 outbound trips during the PM peak hour.

Project Impacts

Intersection Level of Service Impacts

It is assumed in this analysis that the transportation network under project conditions would be the same as the existing transportation network with the exception of the conversion of Second and Third Streets from one-way streets to two-way streets. The conversion will require lane geometrics to be adjusted at intersections along Second and Third Streets between Virginia Street and San Salvador Street.

However, the couplet conversion is expected to occur over an extended time frame over the next 20 or more years, while this project will occur within a five-year time frame, therefore this traffic impact analysis provides an evaluation of the project without and with the couplet conversion.

The results of the intersection level of service analysis show that none of the signalized study intersections would be impacted by the project without and with the couplet conversion according to City of San Jose level of service standards.

Other Transportation Issues

Intersection Operations Analysis

The operations analysis indicated that the estimated maximum vehicle queues for all of the selected high-demand intersection movements would exceed the existing vehicle storage capacity under project conditions. It should be noted that the identified deficient turn-movements are also shown to be deficient under existing and background conditions. The following intersections currently and are projected to have inadequate storage capacity.

First Street and Keyes Street – Though the analysis indicates inadequate storage capacity for the southbound left-turn movement at the intersection of First Street and Keyes Street under project conditions without and with the couplet conversion, the project is not projected to add to the projected queue. The storage deficiency is projected under background conditions. Therefore, the deficiency will not be significantly affected by the project.

Second Street and Keyes Street – The existing maximum vehicle queue for the westbound left-turn lane on Keyes Street at Second Street (200 feet in the AM peak hour) exceeds the existing storage capacity of 125 feet. The storage deficiency is projected to remain deficient under background conditions. Under project conditions, the project would add two vehicles to extend the queue length to approximately 250 feet. Second Street is planned to be converted from a one-way, southbound roadway to a two-way roadway. With the conversion of Second Street to a two-way roadway, projected vehicle queues will extend to 275 feet under both background and project conditions. It is not possible to extend the left-turn pocket the necessary 150 feet nor add a second left-turn lane due to right-of-way constraints along Keyes Street and the close proximity of the upstream intersection of Third Street and Keyes Street.

Seventh Street and Keyes Street – Though the analysis indicates inadequate storage capacity for the eastbound left-turn movement at the intersection of Seventh Street and Keyes Street under project conditions without and with the couplet conversion, the project is not projected to add to the projected queue. The storage deficiency is projected under background conditions. Therefore, the deficiency will not be significantly affected by the project.

Site Access and On-Site Circulation

Site Access

The project site plan proposes one access driveway from Second Street and one exit driveway along Keyes Street for the at-grade retail parking lot. The Third Street driveway will be restricted to residents only and provide both ingress and egress to the below grade residential parking.

The driveway along Keyes Street will provide exit only from the one-way drive aisle serving the retail parking lot. Signage should be placed at the driveway restricting inbound traffic.

The Second Street driveway is proposed to only provide access with no exit. The restriction of the outbound left-turn movement from the driveway will avoid any safety issues with southbound Second Street traffic. Vehicle queues from the existing intersection of Second Street and First Street occasionally back-up. The vehicle queue will inhibit vehicles from the project driveway and could create unsafe conditions due to the southbound Second Street to Humboldt Street traffic that is not controlled. All driveways should be designed to meet City of San Jose standards.

The residential driveway along Third Street will provide one inbound lane and one outbound lane. Under conditions with Third Street providing one-way northbound traffic flow only, the inbound driveway lane will be provided on the right side while the outbound lane is provided on the left side of the driveway. The orientation of inbound and outbound driveway lanes will need to be reversed upon conversion of Third Street to a two-way street.

Delivery loading zones will be provided along the project's frontage on Second Street. No large delivery trucks will access to the on-site parking areas. Garbage pick-up will occur at the Keyes Street driveway. The Fire Department has reviewed the site plan and indicated that they will not require access to the on-site parking areas.

On-Site Circulation

The on-site retail parking lot and spaces will be served by a one-way 26 foot drive aisle beginning at the Second Street entrance and terminating at the Keyes Street exit. All spaces will be oriented at 90-degree angles with respect to the drive aisle. Circulation through the parking lot will be continuos and will not be inhibited by any dead end aisles, but the one-way drive aisle will require that any vehicle that circulates through the parking lot and does not find a parking space to exit the parking lot. Vehicles exiting the retail lot and wanting to return to search for parking again will need to travel eastbound down Keyes Street and re-circulate to Second Street. Though the re-circulation of vehicles is not ideal, it is not expected that the retail parking lot will be completely full the majority of the time. It is also expected that the majority of those vehicles that are unable to find a space will choose not to re-circulate and by pass the stop at the project site all together. The retail component of the site is expected to be primarily neighborhood serving, so the loss of patrons due to the re-circulation will be negligible.

Under existing conditions, with Third Street remaining a one-way street, the drive aisle within the residential garage will need to provide one-way clockwise circulation so as to prevent vehicular conflicts within the garage due to the right hand side inbound lane. Upon conversion of Third Street to a two way street, the drive aisle within the residential garage can provide two-way circulation.

Transit and Pedestrian Analysis

Although no deduction was applied to the estimated trip generation for the project, it can be assumed that some of the project trips could be made by transit. Assuming up to 3% transit mode share, which is probably the highest that could be expected, yields an estimate of approximately three (3) transit trips during the peak hours. Given that the site is served by several bus routes, these riders easily could be accommodated by the existing service.

Sidewalks are found along all streets that bound the project site. These sidewalks are adequate to serve the anticipated pedestrian demand.

The bikeways within the vicinity of the project site include bike lanes on Seventh Street, as well as segments of Keyes Street and Senter Road. These facilities would remain unchanged under project conditions. VTA recommends new developments to provide bicycle parking, and provides recommended bicycle parking rates in their *VTA Countywide Bicycle Plan* Technical Guidelines, September 1999. Two types of bicycle parking are described by VTA: Class I and Class II. Class I bicycle parking include bicycle lockers, rooms with key access for regular bicycle commuters, guarded parking areas, and valet or check-in parking. Class II bicycle parking refers to a bicycle rack to which the frame and at least one wheel of the bicycle can be secured with a user-provided lock and cable. According to VTA's recommended rates, a residential project (such as the proposed project) should provide one Class I bicycle parking space for every 3 proposed units and one Class II bicycle parking for every 15 proposed units. According to the recommended rates, the proposed project should provide 41 Class I and 8 Class II bicycle parking spaces.

Table ES 1
Intersection Level of Service Summary

Study Number		Peak Hour	Existing		Without Couplet Conversion						With Couplet Conversion					
					Background		Project Conditions				Background		Project Conditions			
			Ave. Delay	LOS	Ave. Delay	LOS	Ave. Delay	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C	Ave. Delay	LOS	Ave. Delay	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
1	First Street and Keyes Street*	AM	27	C	28	C	28	C	0.4	0.006	28	C	28	C	0.4	0.006
		PM	29	C	28	C	29	C	0.2	0.002	28	C	29	C	0.2	0.002
2	Second Street and Keyes Street	AM	19	B	20	C	21	C	0.3	0.016	32	C	32	C	0.1	0.003
		PM	28	C	29	C	29	C	1.2	0.022	37	D	37	D	0.6	0.012
3	Third Street and Keyes Street	AM	23	C	23	C	23	C	0.1	0.007	30	C	30	C	0.1	0.003
		PM	15	B	17	B	17	B	0.1	0.010	26	C	26	C	0.0	0.001
4	Seventh Street and Keyes Street	AM	32	C	32	C	33	C	1.1	0.015	32	C	33	C	1.1	0.015
		PM	36	D	37	D	37	D	0.7	0.012	37	D	37	D	0.7	0.012
5	First Street and Willow Street*	AM	4	A	4	A	4	A	0.0	0.001	4	A	4	A	0.0	0.001
		PM	9	A	8	A	8	A	0.0	0.000	8	A	8	A	0.0	0.000
6	First Street and Second Street	AM	14	B	15	B	16	B	1.2	0.017	15	B	16	B	1.2	0.017
		PM	13	B	14	B	15	B	0.8	0.035	22	C	27	C	5.6	0.047
7	First Street and Alma Avenue*	AM	44	D	48	D	48	D	0.4	0.003	48	D	48	D	0.4	0.003
		PM	43	D	43	D	43	D	0.0	0.001	43	D	43	D	0.0	0.001

☐ -Denotes Significant Impact

Table ES 2
Vehicle Queuing Analysis Summary

	Without Couplet Conversion			With Couplet Conversion		
	First/ Keyes	Second/ Keyes	Seventh/ Keyes	First/ Keyes	Second/ Keyes	Seventh/ Keyes
Measurement	SBL PM	WBL AM	EBL AM	SBL PM	WBL AM	EBL AM
Existing Conditions						
Cycle/Delay[1] (sec)	134	132	116	134	132	116
Lanes	1	1	1	1	1	1
Volume (vph)	116	114	86	116	114	86
Volume (vphpl)	116	114	86	116	114	86
Avg. Queue (veh/ln.)	4.3	4.2	2.8	4.3	4.2	2.8
Avg. Queue[2] (ft./ln)	108	105	69	108	105	69
95th %. Queue (veh/ln.)	8	8	6	8	8	6
95th %. Queue (ft./ln)	200	200	150	200	200	150
Storage (ft./ ln.)	100	125	125	100	125	125
Adequate (Y/N)	NO	NO	NO	NO	NO	NO
Background Conditions						
Cycle/Delay[1] (sec)	134	132	116	134	132	116
Lanes	1	1	1	1	1	1
Volume (vph)	116	125	87	116	176	87
Volume (vphpl)	116	125	87	116	176	87
Avg. Queue (veh/ln.)	4.3	4.6	2.8	4.3	6.5	2.8
Avg. Queue[2] (ft./ln)	108	115	70	108	161	70
95th %. Queue (veh/ln.)	8	8	6	8	11	6
95th %. Queue (ft./ln)	200	200	150	200	275	150
Storage (ft./ ln.)	100	125	125	100	125	125
Adequate (Y/N)	NO	NO	NO	NO	NO	NO
Project Conditions						
Cycle/Delay[1] (sec)	134	132	116	134	132	116
Lanes	1	1	1	1	1	1
Volume (vph)	120	151	108	120	181	108
Volume (vphpl)	120	151	108	120	181	108
Avg. Queue (veh/ln.)	4.5	5.5	3.5	4.5	6.6	3.5
Avg. Queue[2] (ft./ln)	112	138	87	112	166	87
95th %. Queue (veh/ln.)	8	10	7	8	11	7
95th %. Queue (ft./ln)	200	250	175	200	275	175
Storage (ft./ ln.)	100	125	125	100	125	125
Adequate (Y/N)	NO	NO	NO	NO	NO	NO

[1] Vehicle queue calculations based on cycle length for signalized intersections.
[2] Assumes 25 Feet Per Vehicle Queued

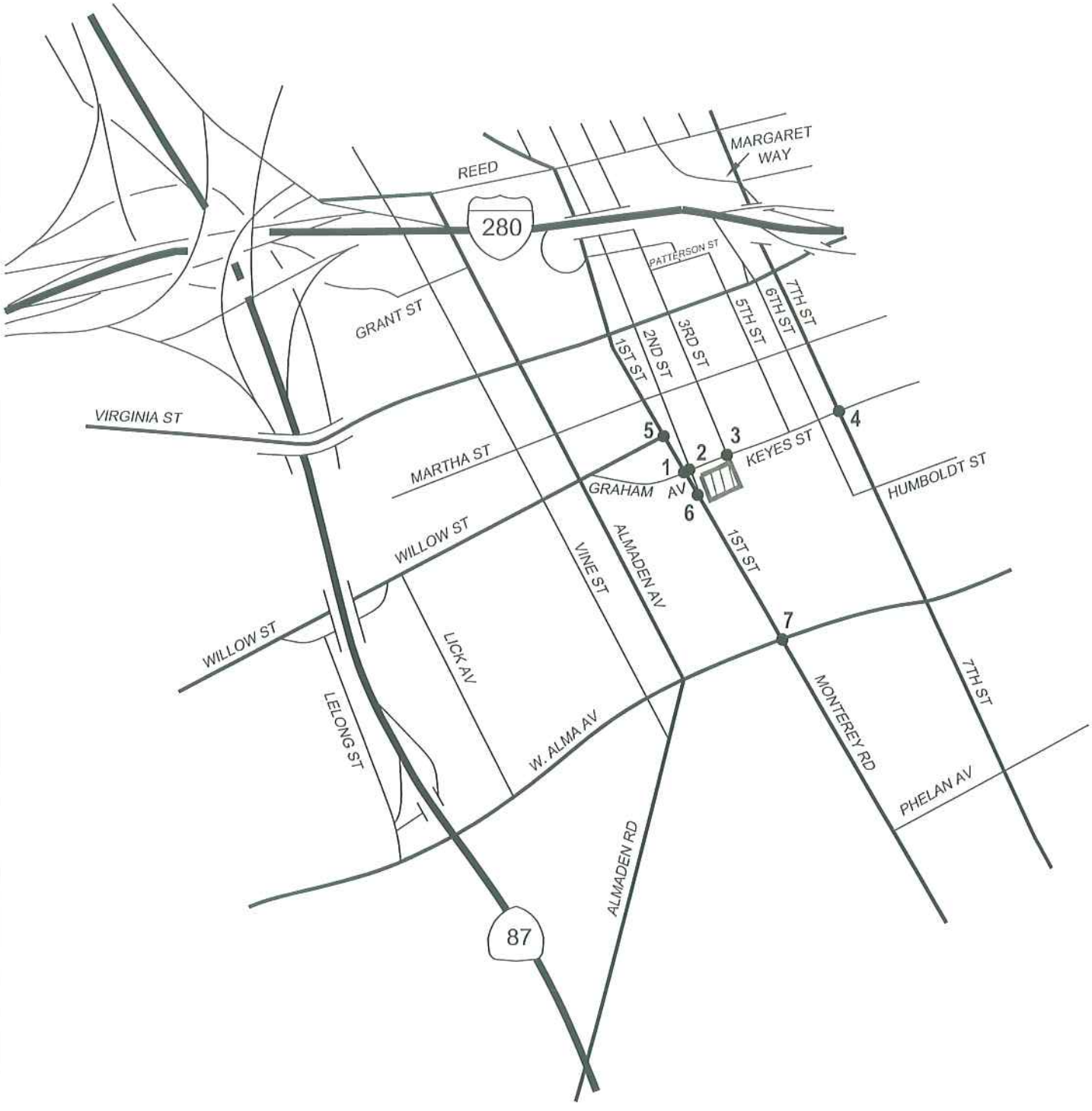
1. Introduction

This report presents the results of the traffic impact analysis conducted for the proposed Second and Keyes Streets mixed-use development in San Jose, California. The project site is currently vacant and is bounded by Second Street to the west, Keyes Street to the north, Third Street to the east, and Humboldt Street to the south. The project as proposed would consist of the construction of 143 studio apartments and 11,500 s.f. of retail space. Access to the site would be provided via driveways along Second Street, Keyes Street, and Third Street. Parking for the retail component of the development would be provided by an at-grade parking garage, while residential parking would be provided below grade. The project site and the surrounding study area are shown on Figure 1. The project site plan is shown on Figure 2.

Scope of Study

This study was conducted for the purpose of identifying the potential traffic impacts related to the proposed development. The potential impacts of the project were evaluated in accordance with the standards set forth by the City of San Jose level of service policy and the Santa Clara Valley Transportation Authority CMP. The traffic analysis is based on peak-hour levels of service for signalized intersections. The traffic analysis also includes an operations analysis, based on vehicle-storage requirements at selected intersection locations. A freeway level of service analysis was not performed since project trips on freeway segments would be much less than one percent of the capacity of the segments. The study intersections are identified below.

1. First Street and Keyes Street*
2. Second Street and Keyes Street
3. Third Street and Keyes Street
4. Seventh Street and Keyes Street
5. First Street and Willow Street*
6. First Street and Second Street
7. First Street and Alma Avenue*



LEGEND

= Site Location

= Study Intersection

Figure 1

SITE LOCATION AND STUDY INTERSECTIONS

Second and Keyes Mixed-Use Development

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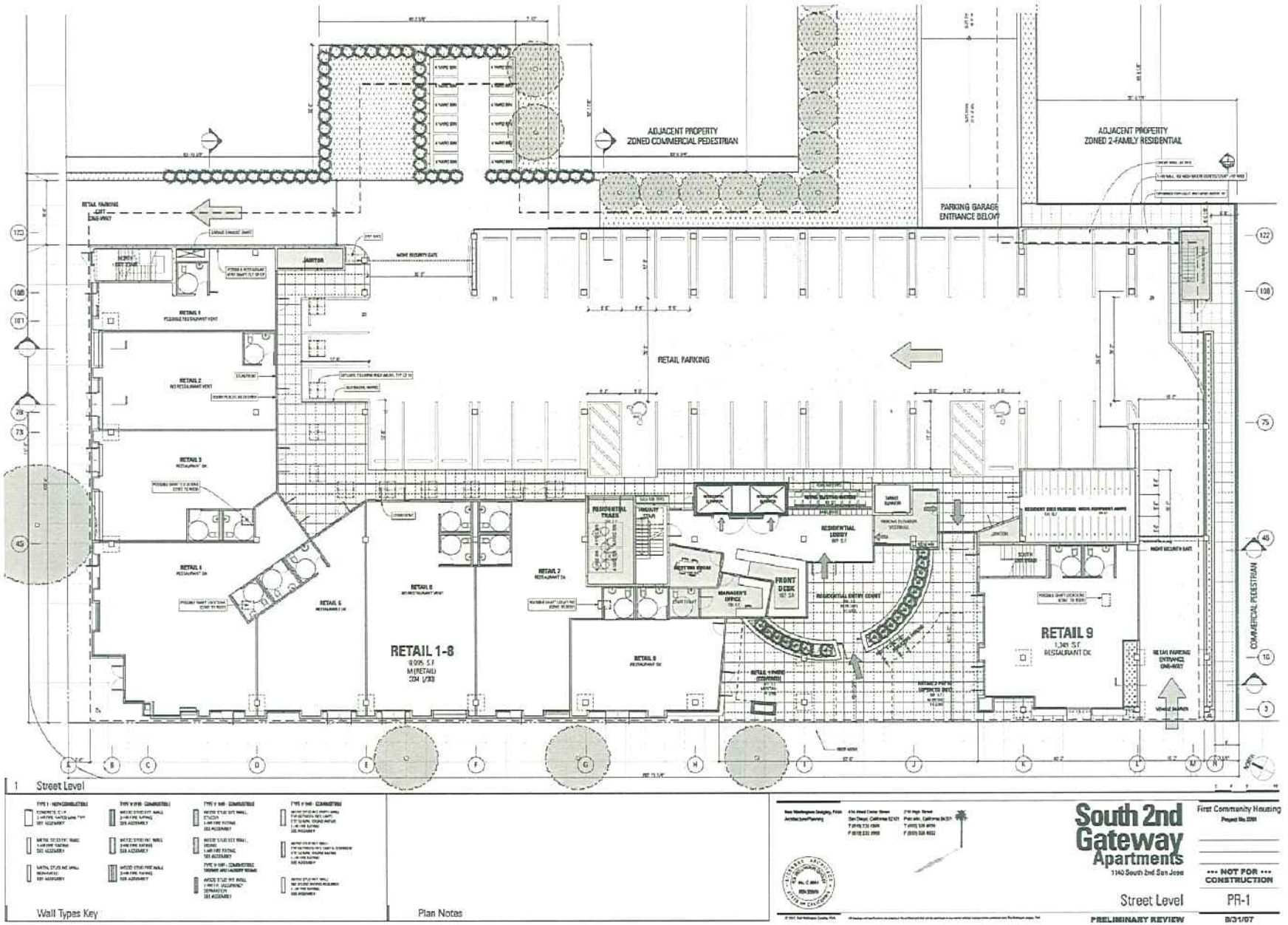

Figure 2

SITE PLAN

Second and Keyes Mixed-Use Development

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In summary, the study includes an analysis of seven signalized intersections in the vicinity of the project site. The study intersections were evaluated against the standards set forth by the City of San Jose.

Traffic conditions at the intersections were analyzed for the weekday AM and PM peak hours of traffic. The AM peak hour of traffic is generally between 7:00 and 9:00 AM, and the PM peak hour is typically between 4:00 and 6:00 PM. It is during these periods that the most congested traffic conditions occur on an average day.

Traffic conditions were evaluated for the following scenarios:

Scenario 1: *Existing Conditions.* Existing traffic volumes were obtained from the City of San Jose and recent traffic counts.

Scenario 2: *Background Conditions.* Background traffic volumes were estimated by adding to existing peak-hour volumes the projected volumes from approved but not yet completed developments. The latter component is contained in the City of San Jose Approved Trips Inventory (ATI).

Scenario 3: *Project Conditions.* Background traffic volumes with the project (hereafter called *project traffic volumes*) were estimated by adding to background traffic volumes the additional traffic generated by the project. Project conditions were evaluated relative to background conditions in order to determine potential project impacts.

Scenario 4: *Future Conditions.* Traffic volumes under future conditions were estimated by applying a growth factor (1.2 percent per year) to existing volumes, adding trips from approved developments, and adding project trips. This scenario is evaluated in fulfillment of CMP requirements.

Methodology

This section presents the methods used to determine the traffic conditions for each scenario described above. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards.

Data Requirements

The data required for the analysis were obtained from new traffic counts, previous traffic studies, and the City of San Jose. The following data were collected from these sources:

- existing traffic volumes
- lane configurations
- signal timing and phasing (for signalized intersections only)

Analysis Methodologies and Level of Service Standards

Traffic conditions at the study intersections were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The City of San Jose analysis method is described below.

Signalized Intersections

All of the signalized study intersections are located in the City of San Jose and are therefore subject to the City of San Jose Level of Service standards. The City of San Jose level of service methodology is TRAFFIX, which is based on the *Highway Capacity Manual* (HCM) 2000 method for signalized intersections. TRAFFIX evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. Since TRAFFIX is also the CMP-designated intersection level of service methodology, the City of San Jose methodology employs the CMP default values for the analysis parameters. The City of San Jose level of service standard for signalized intersections is LOS D or better. The correlation between average delay and level of service is shown in Table 1.

Table 1
Intersection Level of Service Definitions Based on Delay

Level of Service	Description	Average Control Delay Per Vehicle (Sec.)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	Less than 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.1 to 80.0
F	Operation with delays unacceptable to most drivers occurring due to oversaturation, poor progression, or very long cycle lengths.	Greater than 80.0

Source: Transportation Research Board, Highway Capacity Manual (Washington, D.C., 2000), p. 16-2

Intersection Operations

The operations analysis is based on vehicle queuing for high-demand movements at intersections. Vehicle queues were estimated using a Poisson probability distribution, which estimates the probability of "n" vehicles for a vehicle movement using the following formula:

$$P(x=n) = \frac{\lambda^n e^{-(\lambda)}}{n!}$$

Where:

P (x=n) = probability of "n" vehicles in queue per lane
n = number of vehicles in the queue per lane
λ = Average number of vehicles in the queue per lane (vehicles per hour per lane/signal cycles per hour)

The basis of the analysis is as follows: (1) the Poisson probability distribution is used to estimate the 95th percentile maximum number of queued vehicles per signal cycle for a particular movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the movement.

Report Organization

The remainder of this report is divided into five chapters. Chapter 2 describes existing conditions in terms of the existing roadway network and other transportation facilities. Chapter 3 presents the intersection operations under background conditions. Chapter 4 describes the method used to estimate project traffic and its impact on the transportation system and describes the recommended mitigation measures. Chapter 5 discusses the traffic conditions resulting from additional future growth. Chapter 6 presents the conclusions of the traffic impact analysis.

2.
Existing Conditions

This chapter describes the existing conditions for all of the major transportation facilities in the vicinity of the site, including the roadway network, transit service, and bicycle and pedestrian facilities.

Existing Roadway Network

Regional access to the site is provided by I-280 and Guadalupe Parkway (SR 87). These facilities are described below.

I-280 is an eight-lane freeway in the vicinity of the site. It extends northwest to San Francisco and east to King Road in San Jose, at which point it makes a transition into I-680 to Oakland. Access to the site is provided via its interchanges with Seventh and Fourth Streets.

SR 87 is a north-south freeway that begins at its interchange with SR 85 and extends northward to US 101. SR 87 is four lanes wide south of Taylor Street and six lanes wide (4 mixed-flow and 2 HOV lanes) north of Taylor Street. SR 87 is currently being widened to six lanes between SR 85 and Taylor Street. Access to and from the project site is provided via its junctions with I-280 and Alma Avenue.

Local access to the site is provided by First Street, Second Street, Third Street, Seventh Street, Virginia Street, Willow Street, Keyes Street, and Monterey Road. These roadways are described below.

First Street is a four-lane north-south roadway between Alma Avenue and San Carlos Street. South of Alma Avenue, the roadway changes designation to Monterey Road. The roadway becomes a one-lane and one-way northbound street between San Carlos Street and Julian Street. From San Carlos to Julian Street, the Guadalupe LRT line runs along the right side of First Street.

Second Street is a north-south arterial that runs north from its intersection with First Street into downtown. Between First Street and San Carlos Street, Second Street is a three-lane one-way southbound roadway. Two lanes southbound are provided north of San Carlos Street. Second Street forms the western boundary of the project site and will provide for direct access to the site via one driveway.

Third Street is a three lane one-way northbound roadway that extends north from Keyes Street into downtown. Third Street forms the eastern boundary of the project site and will provide for direct access to the site via one driveway.

Seventh Street is a north-south roadway that begins at Tully Road and continues north to San Salvador Street, south of the University. North of the University, Seventh Street extends north and terminates at Commercial Street. Seventh Street is classified as a major collector street south of Reed Street.

Virginia Street is a two-lane east-west roadway. West of Monterey Road, Virginia Street is classified as a major collector street.

Willow Street is an east-west roadway that extends east from Meridian Avenue to First Street.

Keyes Street is an east-west roadway that extends east from Monterey Road and continues to Senter Road, where it becomes Story Road. West of Monterey Road, Keyes Street becomes Goodyear Street, a minor residential street. Keyes Street forms the northern boundary of the project site and will provide for direct access to the site via one driveway.

Monterey Road (SR 82) is a north-south arterial that runs from central San Jose south to Morgan Hill. In the vicinity of the project site, the roadway is a six-lane arterial. North of Alma Avenue, Monterey Road becomes South First Street, which transverses downtown San Jose.

Existing Bicycle and Pedestrian Facilities

There are some bikeways within the vicinity of the project site (see Figure 3). Class II bikeways (striped bike lanes) are available on Seventh Street, and segments of Keyes Street and Senter Road. A Class I bike path is located alongside SR 87 between Curtner Avenue and Willow Street.

Pedestrian facilities in the project area consist primarily of sidewalks along the streets in most residential and commercial areas. Sidewalks are found along several of the previously described local roadways in the study area and along the local residential streets and collectors near the site.

Existing Transit Service

Existing transit service to the study area is provided by the VTA. These are described below and shown on Figure 4.

VTA Transit Service

Bus Service

The study area is served by several local bus routes, with bus stops located within walking distance from the project site. The 82 line provides service between Westgate and Mission Street via Hamilton Avenue, Alma Avenue, Seventh Street, First and Second Street, and Julian and St. James Street, with 30-minute headways during commute hours. The 25 line provides service between the National Hispanic University (located at White Road and Story Road) and De Anza College via Story Road/Keyes Street, Willow Avenue, Fruitdale Avenue, Moorpark Avenue, Williams Road, and Bollinger Road, with 10- to 30-minute headways during commute hours.

LEGEND

= Site Location

= Bike Lanes

= Bike Paths

Figure 3

EXISTING BICYCLE FACILITIES

Second and Keyes Mixed-Use Development

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Figure 4

EXISTING TRANSIT FACILITIES

Second and Keyes Mixed-Use Development

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Other bus lines in the vicinity of the project site include bus line 66, 68, and 73. The line 66 provides service between the Santa Teresa Hospital and Milpitas via First Street, Second Street, Monterey Road, Snell Avenue, and Santa Teresa Boulevard, with 15-minute headways during the commute hours. The line 68 provides service between the Gilroy Transit Center and San Jose Diridon Station via Santa Clara Street, First Street, Second Street, Monterey Road, Cottle Boulevard, and Santa Teresa Boulevard, with 15-minute headways during commute hours. The 73 line provides service between Downtown San Jose and Snell and Capitol Expressway via Senter Road, Keyes Street, Tenth and Eleventh Street, San Fernando Street, and First and Second Street, with 20-minute headways during commute hours.

Existing Intersection Lane Configurations

The existing lane configurations at the study intersections were provided by city staff and confirmed by observations in the field. The existing intersection lane configurations are shown on Figure 5.

Existing Traffic Volumes

Existing peak-hour traffic volumes were obtained from the City of San Jose and supplemented with manual turning-movement counts at intersections where counts were either unavailable or outdated (more than one year old). The existing peak-hour intersection volumes are shown on Figure 6. The traffic count data are included in Appendix A.

Existing Intersection Levels of Service

The results of the level of service analysis under existing conditions are summarized in Table 2. The results show that all of the signalized study intersections currently operate at an acceptable LOS D or better. The level of service calculation sheets are included in Appendix C.

Observed Existing Traffic Conditions

Traffic conditions in the field were observed in order to identify existing operational deficiencies and to confirm the accuracy of calculated levels of service. The purpose of this effort was (1) to identify any existing traffic problems that may not be directly related to intersection level of service, and (2) to identify any locations where the level of service calculation does not accurately reflect level of service in the field.

Field observations revealed the following operational problems that may not be reflected in level of service calculations:

Seventh Street – In the project area, traffic in both the northbound and southbound directions along Seventh Street is fairly heavy with a larger than normal amount of heavy trucks. Even with the high volumes along Seventh Street, intersections operate with few problems and phase failures. At the intersection with Virginia Street, the eastbound approach lanes fill to capacity, but do not block the upstream intersection of Sixth Street and Virginia Street and all vehicles clear. Vehicle queues in the southbound through lanes occasionally back up to the upstream intersection at the I-280 westbound off-ramp.

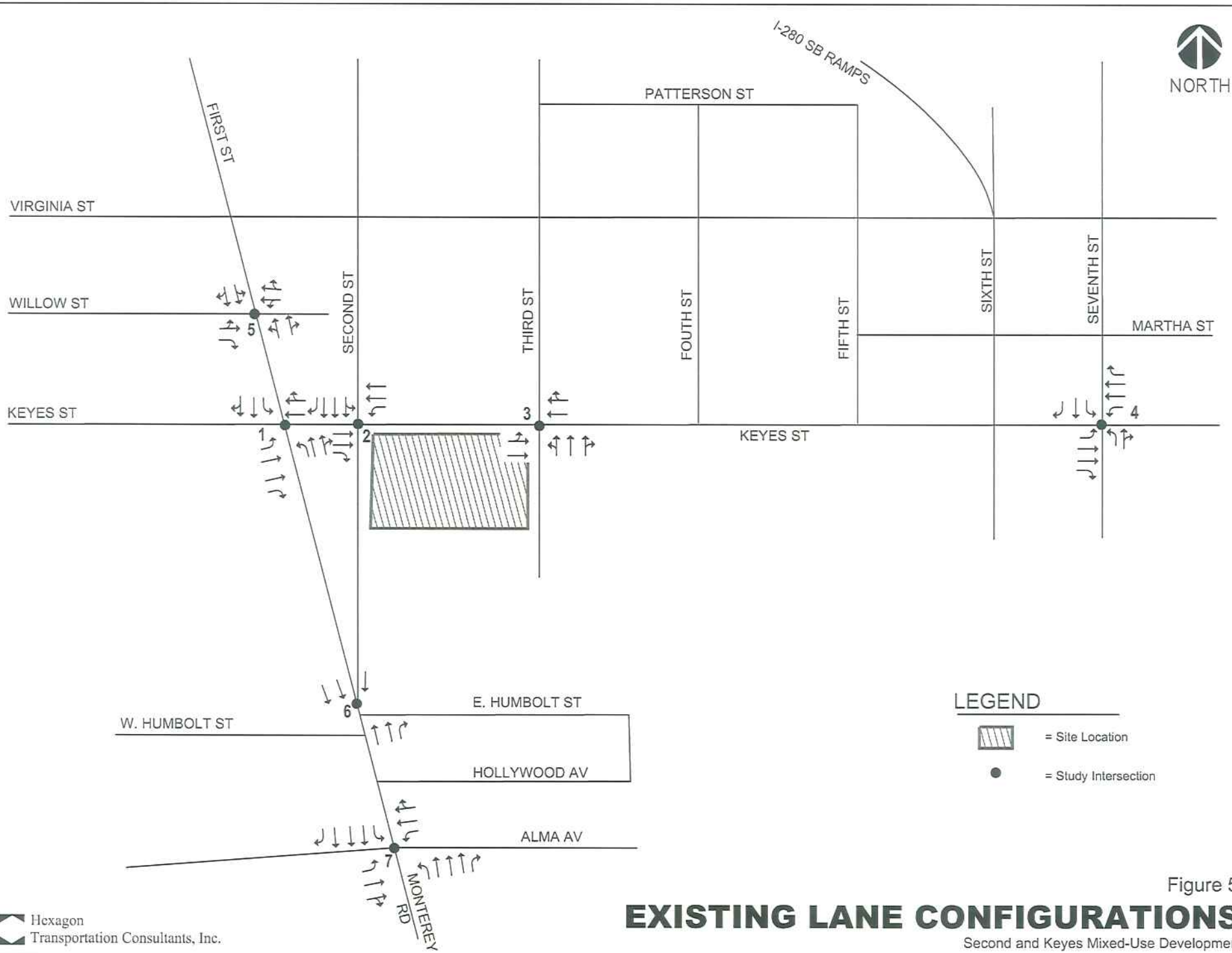

Figure 5

EXISTING LANE CONFIGURATIONS

Second and Keyes Mixed-Use Development

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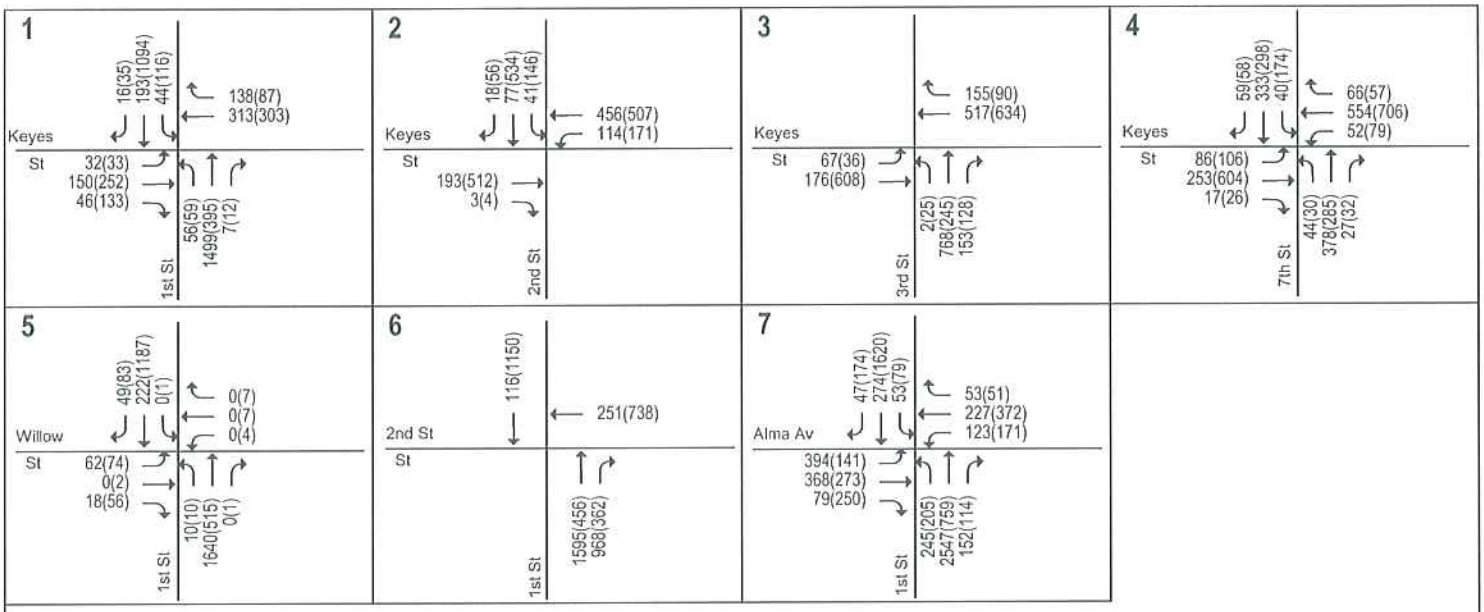

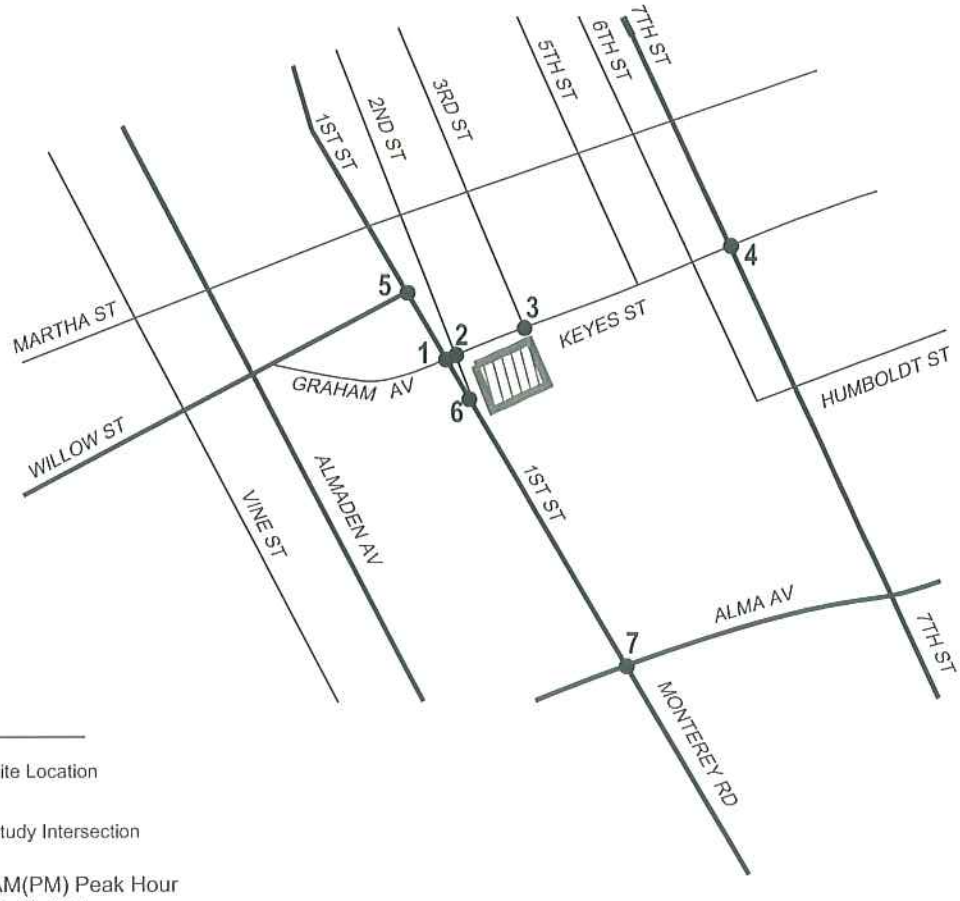

NORTH

LEGEND

= Site Location

= Study Intersection

XX(XX) = AM(PM) Peak Hour Traffic Volumes

Figure 6

EXISTING TRAFFIC VOLUMES

Second and Keyes Mixed-Use Development

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Table 2
Existing Intersection Levels of Service

Study Number	Intersection	Peak Hour	Count Date	Ave. Delay	LOS
1	First Street and Keyes Street*	AM	09/27/06	27	C
		PM	09/27/06	29	C
2	Second Street and Keyes Street	AM	05/17/07	19	B
		PM	05/17/07	28	C
3	Third Street and Keyes Street	AM	05/17/07	23	C
		PM	05/17/07	15	B
4	Seventh Street and Keyes Street	AM	05/17/07	32	C
		PM	05/17/07	36	D
5	First Street and Willow Street*	AM	09/27/06	4	A
		PM	09/27/06	9	A
6	First Street and Second Street	AM	05/23/07	14	B
		PM	05/24/07	13	B
7	First Street and Alma Avenue*	AM	09/27/06	44	D
		PM	09/27/06	43	D

Reed Street – Traffic flows along Reed Street are fairly problem free with the exception of its intersections with Fourth Street and Third Street, but all vehicles clear during the allotted green times at both intersections. Occasionally vehicle queues from the Third Street intersection spill back to Fourth Street.

Fifth Street – It is important to note that the opposite side of Fifth Street from the project site currently consists of light industrial/warehouse uses. Vehicles on the westside of the roadway segment park at ninety (90) degree angles from the buildings. Large trucks were observed parking in this manner, which block up to about eighty (80) percent of the throughway.

The field observations revealed no unusual traffic problems at the remaining signalized intersections, and the level of service analysis appears to accurately reflect actual existing traffic conditions.

3.
Background Conditions

This chapter describes background traffic conditions. Background conditions are defined as conditions just prior to completion of the proposed development. Traffic volumes for background conditions comprise volumes from existing traffic counts plus traffic generated by other approved developments in the vicinity of the site. This chapter describes the procedure used to determine background traffic volumes and the resulting traffic conditions.

Background Transportation Network

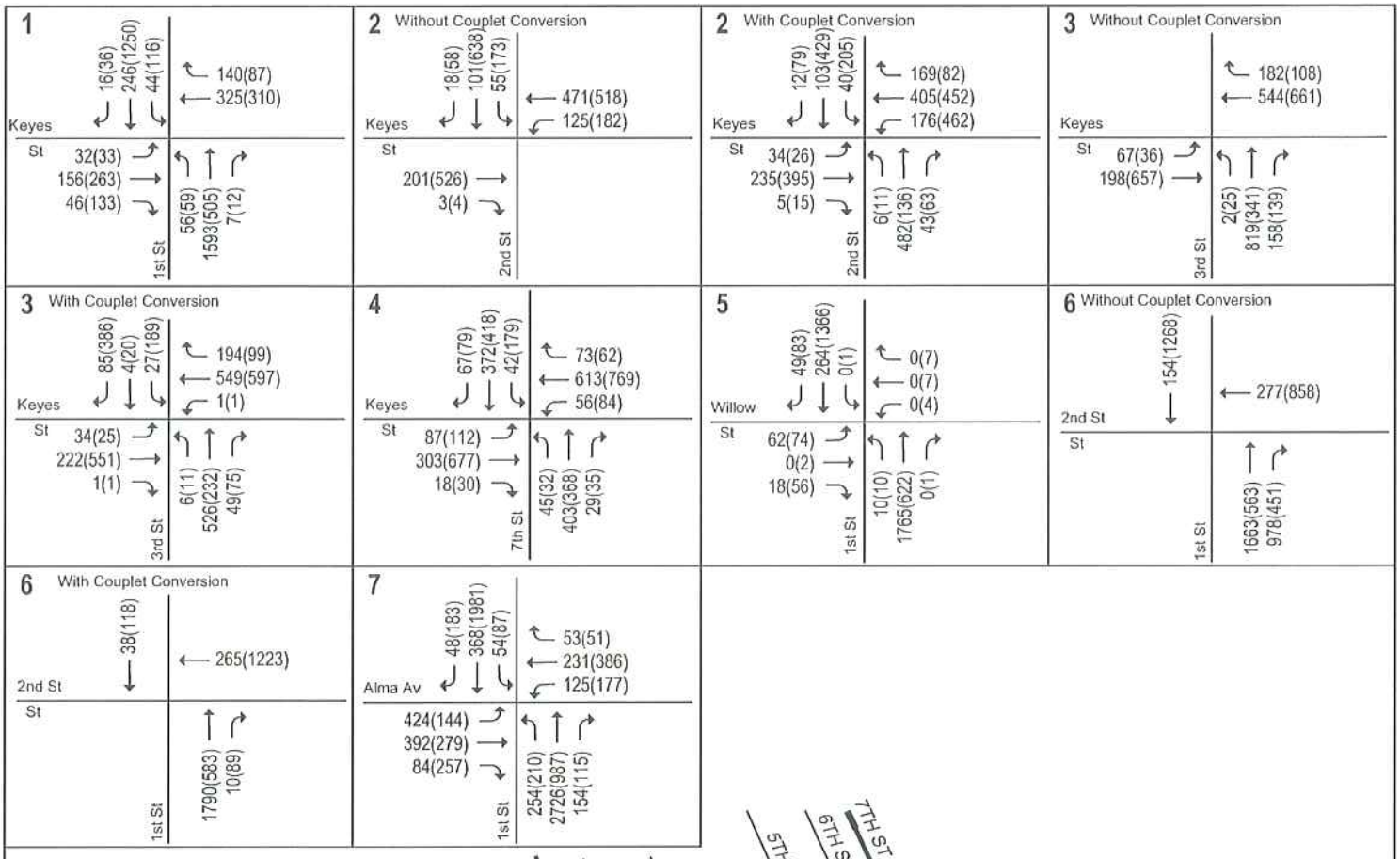
It is assumed in this analysis that the transportation network under background conditions would be the same as the existing transportation network with the exception of the following improvements and/or roadway adjustments:

Second and Third Streets Couplet Conversions - Conversion of Second and Third Streets from one-way streets to two-way streets. The conversion will require lane geometrics to be adjusted at intersections along Second and Third Streets between Virginia Street and San Salvador Street. The conversion will result in a reduction of capacity of the roadways. (Funding: City of San Jose CIP Project)

However, the couplet conversion is expected to occur over an extended time frame over the next 20 or more years, while this project will occur within a five-year time frame, therefore this traffic impact analysis provides an evaluation of the project without and with the couplet conversion.

Background Traffic Volumes

Background peak-hour traffic volumes were calculated by adding to existing volumes the estimated traffic from approved but not yet constructed developments. The added traffic from approved but not yet constructed developments were provided by the city in the form of the Approved Trips Inventory (ATI). Background traffic volumes are shown on Figure 7.



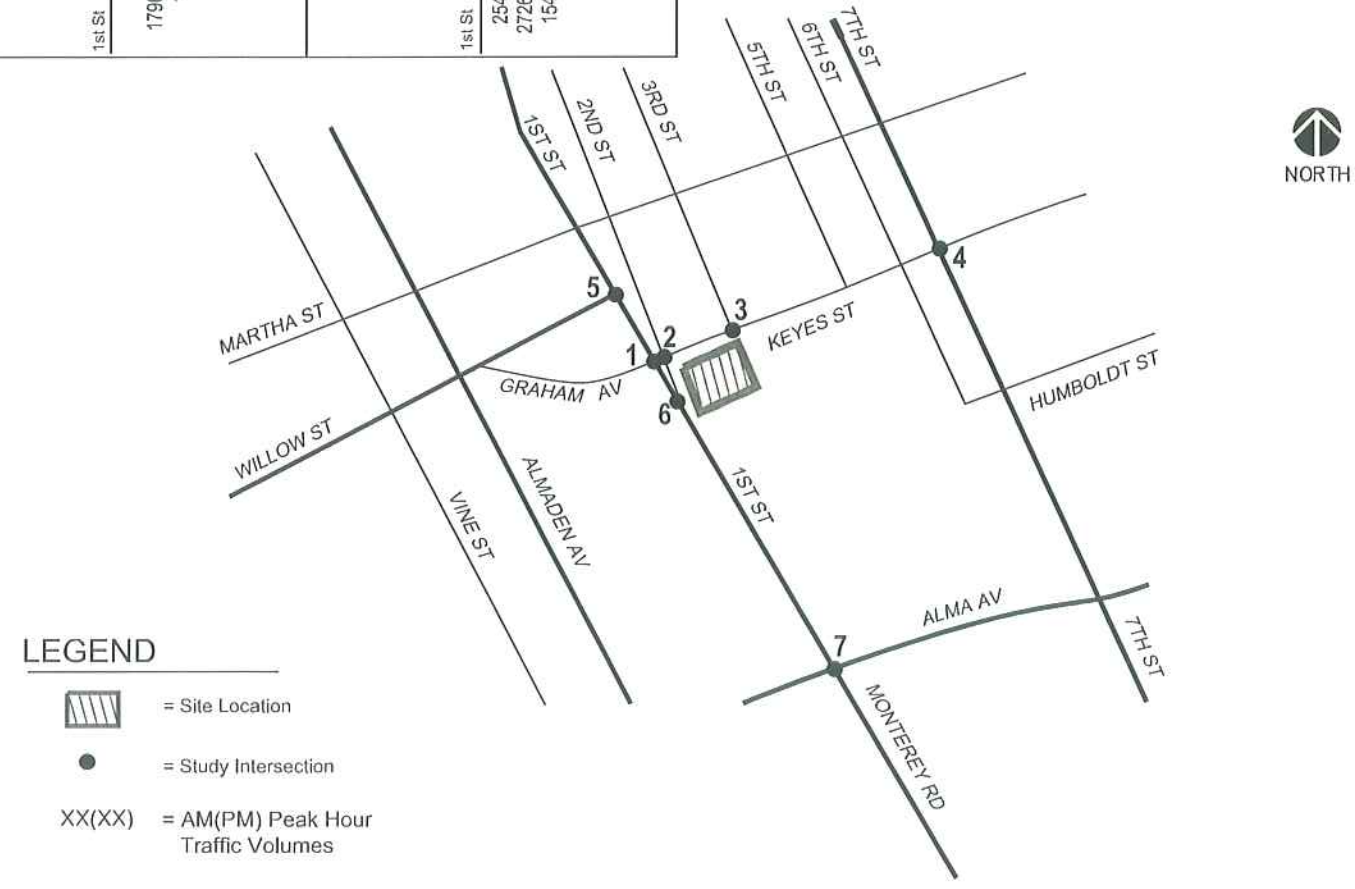


Figure 7

BACKGROUND TRAFFIC VOLUMES

Second and Keyes Mixed-Use Development

Hexagon Transportation Consultants, Inc.

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Background Intersection Levels of Service

The results of the intersection level of service analysis under background conditions are summarized in Table 3. The results show that, all of the signalized study intersections would operate at an acceptable LOS D or better under background conditions without and with the couplet conversion. The level of service calculation sheets are included in Appendix C.

Table 3
Background Intersection Levels of Service

Study Number	Intersection	Peak Hour	Count Date	Existing Ave. Delay	Existing LOS	Without Couplet Background Ave. Delay	Without Couplet Background LOS	With Couplet Background Ave. Delay	With Couplet Background LOS
1	First Street and Keyes Street*	AM	09/27/06	27	C	28	C	28	C
		PM	09/27/06	29	C	28	C	28	C
2	Second Street and Keyes Street	AM	05/17/07	19	B	20	C	32	C
		PM	05/17/07	28	C	29	C	37	D
3	Third Street and Keyes Street	AM	05/17/07	23	C	23	C	30	C
		PM	05/17/07	15	B	17	B	26	C
4	Seventh Street and Keyes Street	AM	05/17/07	32	C	32	C	32	C
		PM	05/17/07	36	D	37	D	37	D
5	First Street and Willow Street*	AM	09/27/06	4	A	4	A	4	A
		PM	09/27/06	9	A	8	A	8	A
6	First Street and Second Street	AM	05/23/07	14	B	15	B	15	B
		PM	05/24/07	13	B	14	B	22	C
7	First Street and Alma Avenue*	AM	09/27/06	44	D	48	D	48	D
		PM	09/27/06	43	D	43	D	43	D

4.
Project Impacts and Mitigation Measures

This chapter describes project traffic conditions, significant project impacts, and measures that are recommended to mitigate project impacts. Included are descriptions of the significance criteria that define an impact, estimates of project-generated traffic, identification of the impacts, and descriptions of the mitigation measures. Project conditions are represented by background traffic conditions with the addition of traffic generated by the project.

Significant Impact Criteria

Significance criteria are used to establish what constitutes an impact. For this analysis there are two sets of relevant criteria for impacts on intersections. These are based on (1) the City of San Jose (CSJ) Level of Service standards, (2) the City of San Jose traffic operations requirements.

Project impacts on other transportation facilities, such as bicycle facilities and transit, were determined on the basis of engineering judgment.

City of San Jose Definition of Significant Intersection Impacts

The project is said to create a significant adverse impact on traffic conditions at a signalized intersection in the City of San Jose if for either peak hour:

1. The level of service at the intersection degrades from an acceptable LOS D or better under background conditions to an unacceptable LOS E or F under project conditions, or

2. The level of service at the intersection is an unacceptable LOS E or F under background conditions and the addition of project trips causes both the critical-movement delay at the intersection to increase by four or more seconds *and* the demand-to-capacity ratio (V/C) to increase by .01 or more.

An exception to this rule applies when the addition of project traffic reduces the amount of average

stopped delay for critical movements (i.e. the change in average stopped delay for critical movements is negative). In this case, the threshold of significance is an increase in the critical V/C value by .01 or more.

A significant impact by City of San Jose standards is said to be satisfactorily mitigated when measures are implemented that would restore intersection level of service to background conditions or better.

Traffic Operational Requirements

Traffic operational requirements are determined based on the adequacy of existing storage to accommodate estimated maximum vehicle queues at turn pockets. The project is said to create a significant adverse impact on traffic conditions if for either peak-hour:

> The estimated maximum (95^{th}-percentile) vehicle queue exceeds the available storage capacity of an intersection turn pocket.

A significant traffic operational impact is said to be satisfactorily mitigated when measures are implemented that would provide the storage capacity needed to accommodate the estimated maximum vehicle queues.

Transportation Network Under Project Conditions

It is assumed in this analysis that the transportation network under project conditions would be the same as described under background conditions.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the site is estimated for the AM and PM peak hours. As part of the project trip distribution, an estimate is made of the directions to and from which the project trips would travel. In the project trip assignment, the project trips are assigned to specific streets and intersections. These procedures are described further in the following sections.

Trip Generation

Through empirical research, data have been collected that correlate to common land uses their propensity for producing traffic. Thus, for the most common land uses there are standard trip generation rates that can be applied to help predict the future traffic increases that would result from a new development. The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. The recommended trip generation rates for use in the City of San Jose are detailed in *Interim Guidelines for Traffic Impact Analysis of Land Use Developments*, 1994.

Trip generation for retail uses is typically adjusted to account for pass-by-trips. Pass-by-trips are trips that would already be on the adjacent roadways (and are therefore already counted in the existing traffic) but would turn into the site while passing by. Justification for applying the pass-by-trip reduction is founded on the observation that such retail traffic is not actually generated by the retail development, but is already

part of the ambient traffic levels. Pass-by-trips are therefore excluded from the traffic projections. A pass-by trip reduction of 25 percent was applied to the retail component of the proposed project.

Additionally, mixed-use reductions to account for the interaction of the proposed land uses were applied. The reductions are based on the assumption that vehicle trips to each of the proposed land uses of the site will be reduced due to internal circulation (i.e. residents patronizing the retail space).

On the basis of the City of San Jose rates and reductions, it is estimated that the proposed mixed-use development would generate 1,318 daily trips, with 93 trips occurring during the AM peak hour and 106 trips during the PM peak hour. Using the specified inbound/outbound splits recommended by the City of San Jose, the project would generate 35 inbound trips and 58 outbound trips during the AM peak hour and 66 inbound and 40 outbound trips during the PM peak hour. The project trip generation estimates are presented in Table 4.

Trip Distribution

The trip distribution pattern for the proposed project was estimated based on existing travel patterns on the surrounding roadway system and the locations of complementary land uses. The trip distribution pattern is shown graphically on Figure 8.

Trip Assignment

The peak-hour trips generated by the proposed development were assigned to the roadway system in accordance with the trip distribution pattern discussed above. Figure 9 shows the project trip assignment.

Project Traffic Volumes

Project trips, as represented in the above project trip assignment, were added to future background traffic volumes to obtain background plus project traffic volumes. Background traffic volumes plus project trips are typically referred to simply as *project traffic volumes*; this is contrasted with the term *project trips,* which is used to signify the traffic that is produced specifically by the project. The project traffic volumes are shown graphically on Figure 10. Traffic volumes for all components of traffic are tabulated in Appendix B.

Project Intersection Analysis

The results of the level of service analysis under project conditions are summarized in Table 5. The results show that, all of the signalized study intersections would operate at an acceptable LOS D or better under project conditions without and with the couplet conversion.

Freeway Segment Analysis

Per CMP technical guidelines, freeway segment level of service analysis shall be conducted on all segments to which the project is projected to add one percent or more to the segment capacity. Since the project is not projected to add one percent to any freeway segments in the area, freeway analysis for the CMP was not required. The percentage of traffic projected to be added by the project is summarized in Table 6.

Table 4
Project Trip Generation Estimates

Land Use	Size	Daily Rate/a/	Daily Trips/a/	AM Peak Hour Pk-Hr Rate	AM In	AM Out	AM Total	PM Peak Hour Pk-Hr Rate	PM In	PM Out	PM Total
Proposed Land Use											
Residential	143 units	6.0	858	0.1	30	56	86	0.1	56	30	86
Specialty Retail / Strip Commercial	11,500 s.f.	40.0	460	0.02	6	3	9	0.09	21	21	41
Sub-Total			1,318		36	59	95		76	51	127
Mixed-use Internalization Reduction (13%)					-2	-1	-2		-5	-5	-11
Pass-By Reduction (25%)									-5	-5	-10
Total					**35**	**58**	**93**		**66**	**40**	**106**

/a/ Rates based on trips per unit for apartment use, and 1,000 s.f. for specialty retail / strip commercial use.
/b/ A pass-by reduction of 25% was applied to retail use during the PM peak hour
/c/ A reduction of 13% was applied to retail use for internalization between retail and residential use. Residential use was reduced by a magnitude equal to the retail, in terms of number of trips (as prescribed by VTA Guidelines).

Source:
City of San Jose Interim Guidelines for Traffic Impact Analysis for Land Developments, "Common Vehicular Trip Generation rates for the San Jose Area," March 1994

Figure 8

PROJECT TRIP DISTRIBUTION

Second and Keyes Mixed-Use Development

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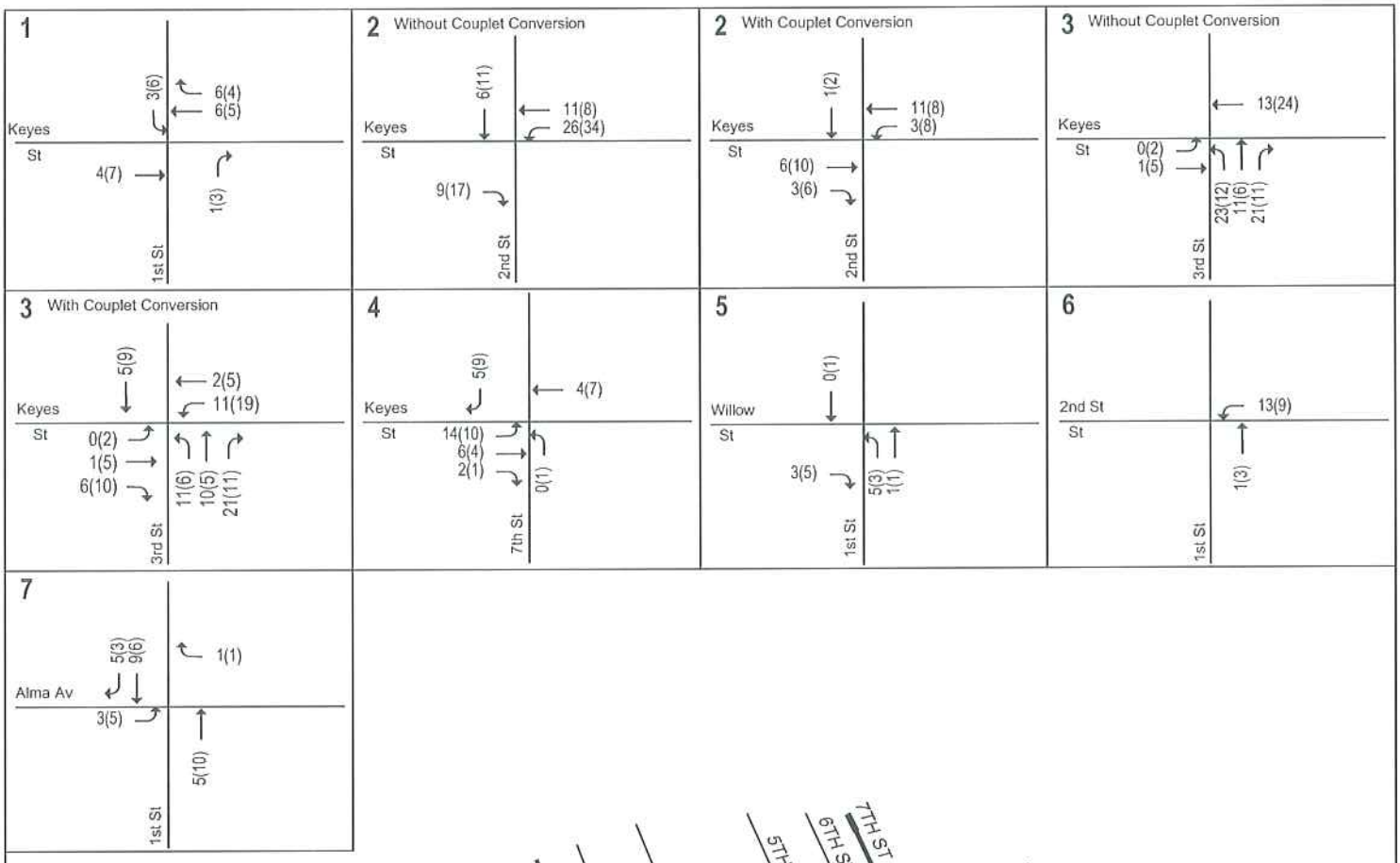

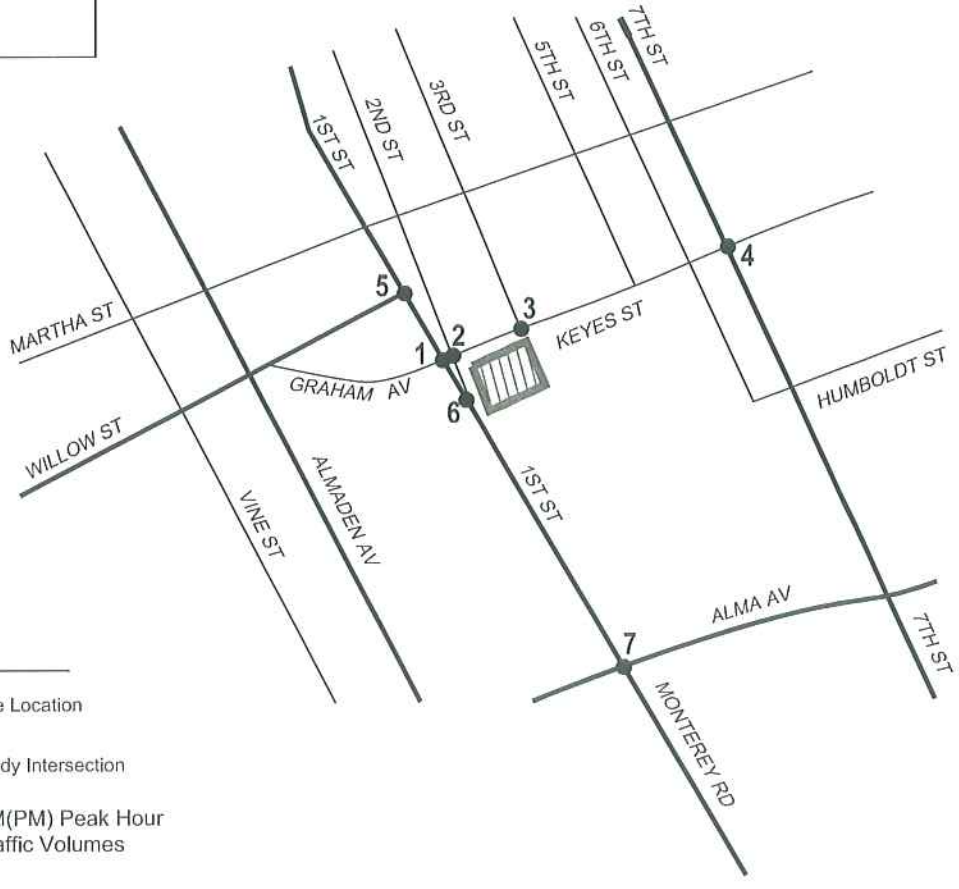

LEGEND

= Site Location

= Study Intersection

XX(XX) = AM(PM) Peak Hour Traffic Volumes

Figure 9

PROJECT TRIP ASSIGNMENT

Second and Keyes Mixed-Use Development

Hexagon Transportation Consultants, Inc.

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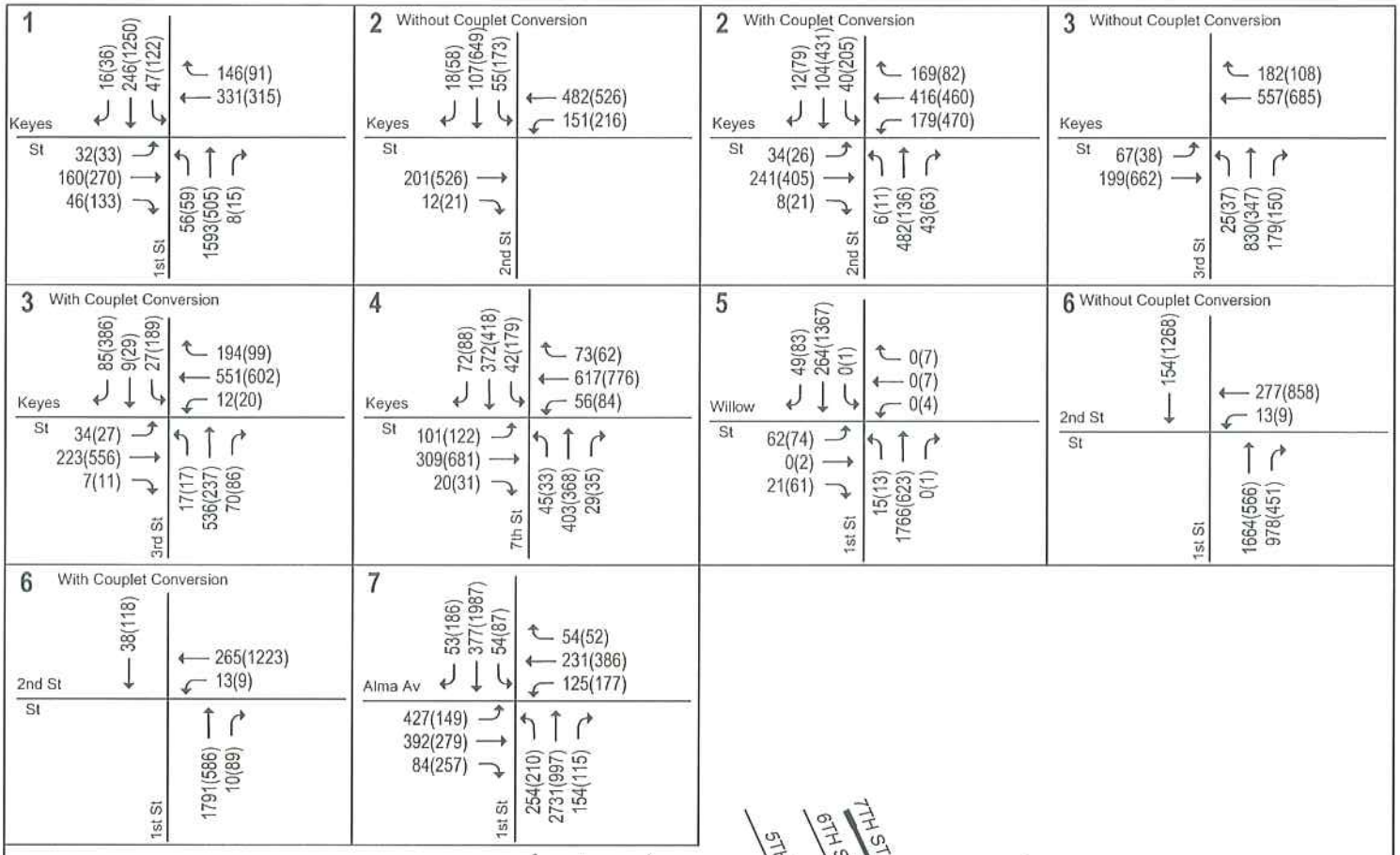

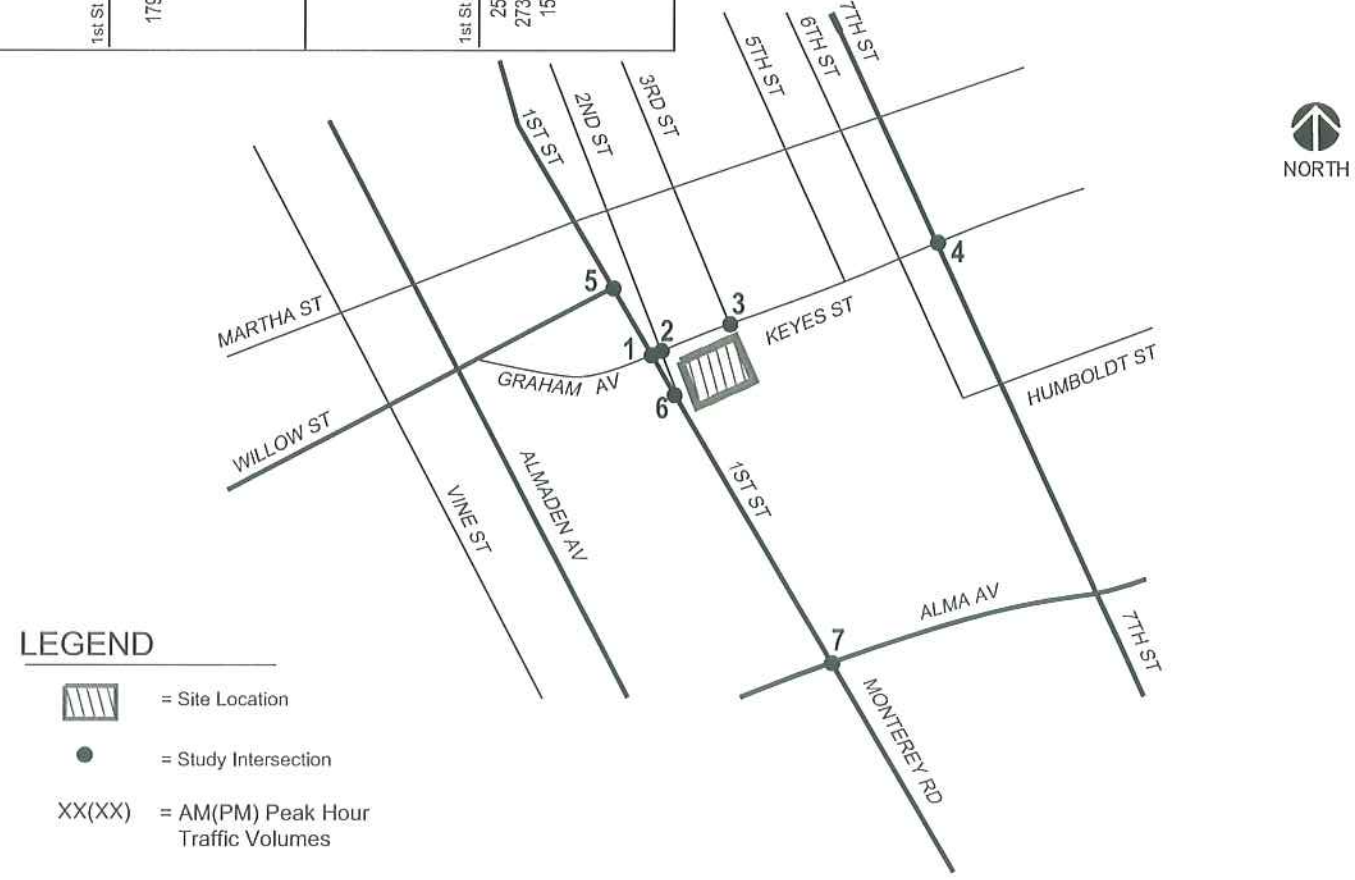

Figure 10

BACKGROUND PLUS PROJECT TRAFFIC VOLUMES

Hexagon
Transportation Consultants, Inc.

Second and Keyes Mixed-Use Development

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Table 5
Project Intersection Levels of Service

Study Number	Intersection	Peak Hour	Without Couplet Conversion: Background Ave. Delay	Background LOS	Project Conditions Ave. Delay	Project Conditions LOS	Incr. In Crit. Delay	Incr. In Crit. V/C	With Couplet Conversion: Background Ave. Delay	Background LOS	Project Conditions Ave. Delay	Project Conditions LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
1	First Street and Keyes Street*	AM	28	C	28	C	0.4	0.006	28	C	28	C	0.4	0.006
		PM	28	C	29	C	0.2	0.002	28	C	29	C	0.2	0.002
2	Second Street and Keyes Street	AM	20	C	21	C	0.3	0.016	32	C	32	C	0.1	0.003
		PM	29	C	29	C	1.2	0.022	37	D	37	D	0.6	0.012
3	Third Street and Keyes Street	AM	23	C	23	C	0.1	0.007	30	C	30	C	0.1	0.003
		PM	17	B	17	B	0.1	0.010	26	C	26	C	0.0	0.001
4	Seventh Street and Keyes Street	AM	32	C	33	C	1.1	0.015	32	C	33	C	1.1	0.015
		PM	37	D	37	D	0.7	0.012	37	D	37	D	0.7	0.012
5	First Street and Willow Street*	AM	4	A	4	A	0.0	0.001	4	A	4	A	0.0	0.001
		PM	8	A	8	A	0.0	0.000	8	A	8	A	0.0	0.000
6	First Street and Second Street	AM	15	B	16	B	1.2	0.017	15	B	16	B	1.2	0.017
		PM	14	B	15	B	0.8	0.035	22	C	27	C	5.6	0.047
7	First Street and Alma Avenue*	AM	48	D	48	D	0.4	0.003	48	D	48	D	0.4	0.003
		PM	43	D	43	D	0.0	0.001	43	D	43	D	0.0	0.001

☐ -Denotes Significant Impact

Table 6
Freeway Segment Capacity

Freeway	Segment	Direction	Peak Hour	Existing Capacity # of Lanes	Existing Capacity Capacity (vph)	Project Trips Volume	Project Trips % Capacity
I-280	Bird Ave to SR-87	EB	AM	4	9,200	7	0.1%
			PM	4	9,200	13	0.1%
I-280	SR 87 to 10th St	EB	AM	4	9,200	8	0.1%
			PM	4	9,200	15	0.2%
I-280	10th St to McLaughlin Ave	EB	AM	4	9,200	9	0.1%
			PM	4	9,200	7	0.1%
SR 87	I-280 to Julian St	NB	AM	2	4,400	11	0.3%
			PM	2	4,400	8	0.2%
SR 87	Alma Ave to I-280	NB	AM	2	4,400	2	0.1%
			PM	2	4,400	3	0.1%
SR 87	I-280 to Alma Ave	SB	AM	2	4,400	3	0.1%
			PM	2	4,400	2	0.1%
SR 87	Julian St to I-280	SB	AM	2	4,400	7	0.2%
			PM	2	4,400	13	0.3%
I-280	McLaughlin Ave to 10th St	WB	AM	4	9,200	6	0.1%
			PM	4	9,200	10	0.1%
I-280	10th St to SR 87	WB	AM	4	9,200	13	0.1%
			PM	4	9,200	9	0.1%
I-280	SR-87 to Bird Ave	WB	AM	4	9,200	11	0.1%
			PM	4	9,200	8	0.1%

/a/ Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 2005.

Other Transportation Issues

Intersection Operations Analysis

The analysis of project intersection level of service was supplemented with an analysis of intersection *operations* for selected signalized intersections. The operations analysis is based on vehicle queuing for high-demand movements at intersections. Vehicle queues were estimated using a Poisson probability distribution. The basis of the analysis is as follows: (1) the Poisson probability distribution is used to estimate the 95th percentile maximum number of queued vehicles per signal cycle for a particular movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the movement. Poisson probability calculation sheets are provided in Appendix D.

The analysis indicated that the estimated maximum vehicle queues for the selected high-demand intersection movements would exceed the existing vehicle storage capacity under project conditions without and with the couplet conversion (see Table 7). It should be noted that the identified deficient turn-movements are also shown to be deficient under existing and background conditions. The following intersections currently and are projected to have inadequate storage capacity.

Table 7
Project Queuing Analysis

Measurement	Without Couplet Conversion			With Couplet Conversion		
	First/ Keyes	Second/ Keyes	Seventh/ Keyes	First/ Keyes	Second/ Keyes	Seventh/ Keyes
	SBL	WBL	EBL	SBL	WBL	EBL
	PM	AM	AM	PM	AM	AM
Existing Conditions						
Cycle/Delay[1] (sec)	134	132	116	134	132	116
Lanes	1	1	1	1	1	1
Volume (vph)	116	114	86	116	114	86
Volume (vphpl)	116	114	86	116	114	86
Avg. Queue (veh/ln.)	4.3	4.2	2.8	4.3	4.2	2.8
Avg. Queue[2] (ft./ln)	108	105	69	108	105	69
95th %. Queue (veh/ln.)	8	8	6	8	8	6
95th %. Queue (ft./ln)	200	200	150	200	200	150
Storage (ft./ ln.)	100	125	125	100	125	125
Adequate (Y/N)	NO	NO	NO	NO	NO	NO
Background Conditions						
Cycle/Delay[1] (sec)	134	132	116	134	132	116
Lanes	1	1	1	1	1	1
Volume (vph)	116	125	87	116	176	87
Volume (vphpl)	116	125	87	116	176	87
Avg. Queue (veh/ln.)	4.3	4.6	2.8	4.3	6.5	2.8
Avg. Queue[2] (ft./ln)	108	115	70	108	161	70
95th %. Queue (veh/ln.)	8	8	6	8	11	6
95th %. Queue (ft./ln)	200	200	150	200	275	150
Storage (ft./ ln.)	100	125	125	100	125	125
Adequate (Y/N)	NO	NO	NO	NO	NO	NO
Project Conditions						
Cycle/Delay[1] (sec)	134	132	116	134	132	116
Lanes	1	1	1	1	1	1
Volume (vph)	120	151	108	120	181	108
Volume (vphpl)	120	151	108	120	181	108
Avg. Queue (veh/ln.)	4.5	5.5	3.5	4.5	6.6	3.5
Avg. Queue[2] (ft./ln)	112	138	87	112	166	87
95th %. Queue (veh/ln.)	8	10	7	8	11	7
95th %. Queue (ft./ln)	200	250	175	200	275	175
Storage (ft./ ln.)	100	125	125	100	125	125
Adequate (Y/N)	NO	NO	NO	NO	NO	NO

[1] Vehicle queue calculations based on cycle length for signalized intersections.
[2] Assumes 25 Feet Per Vehicle Queued

First Street and Keyes Street – Though the analysis indicates inadequate storage capacity for the southbound left-turn movement at the intersection of First Street and Keyes Street under project conditions without and with the couplet conversion, the project is not projected to add to the projected

queue. The storage deficiency is projected under background conditions. Therefore, the deficiency will not be significantly affected by the project.

Second Street and Keyes Street – The existing maximum vehicle queue for the westbound left-turn lane on Keyes Street at Second Street (200 feet in the AM peak hour) exceeds the existing storage capacity of 125 feet. The storage deficiency is projected to remain deficient under background conditions. Under project conditions, the project would add two vehicles to extend the queue length to approximately 250 feet. Second Street is planned to be converted from a one-way, southbound roadway to a two-way roadway. With the conversion of Second Street to a two-way roadway, projected vehicle queues will extend to 275 feet under both background and project conditions. It is not possible to extend the left-turn pocket the necessary 150 feet nor add a second left-turn lane due to right-of-way constraints along Keyes Street and the close proximity of the upstream intersection of Third Street and Keyes Street.

Seventh Street and Keyes Street – Though the analysis indicates inadequate storage capacity for the eastbound left-turn movement at the intersection of Seventh Street and Keyes Street under project conditions without and with the couplet conversion, the project is not projected to add to the projected queue. The storage deficiency is projected under background conditions. Therefore, the deficiency will not be significantly affected by the project.

Site Access and On-Site Circulation

Site Access

The project site plan proposes one access driveway from Second Street and one exit driveway along Keyes Street for the at-grade retail parking lot. The Third Street driveway will be restricted to residents only and provide both ingress and egress to the below grade residential parking.

The driveway along Keyes Street will provide exit only from the one-way drive aisle serving the retail parking lot. Signage should be placed at the driveway restricting inbound traffic.

The Second Street driveway is proposed to only provide access with no exit. The restriction of the outbound left-turn movement from the driveway will avoid any safety issues with southbound Second Street traffic. Vehicle queues from the existing intersection of Second Street and First Street occasionally back-up. The vehicle queue will inhibit vehicles from the project driveway and could create unsafe conditions due to the southbound Second Street to Humboldt Street traffic that is not controlled. All driveways should be designed to meet City of San Jose standards.

The residential driveway along Third Street will provide one inbound lane and one outbound lane. Under conditions with Third Street providing one-way northbound traffic flow only, the inbound driveway lane will be provided on the right side while the outbound lane is provided on the left side of the driveway. The orientation of inbound and outbound driveway lanes will need to be reversed upon conversion of Third Street to a two-way street.

Delivery loading zones will be provided along the project's frontage on Second Street. No large delivery trucks will access to the on-site parking areas. Garbage pick-up will occur at the Keyes Street driveway. The Fire Department has reviewed the site plan and indicated that they will not require access to the on-site parking areas.

On-Site Circulation

The on-site retail parking lot and spaces will be served by a one-way 26 foot drive aisle beginning at the Second Street entrance and terminating at the Keyes Street exit. All spaces will be oriented at 90-degree angles with respect to the drive aisle. Circulation through the parking lot will be continuos and will not be inhibited by any dead end aisles, but the one-way drive aisle will require that any vehicle that circulates through the parking lot and does not find a parking space to exit the parking lot. Vehicles exiting the retail lot and wanting to return to search for parking again will need to travel eastbound down Keyes Street and re-circulate to Second Street. Though the re-circulation of vehicles is not ideal, it is not expected that the retail parking lot will be completely full the majority of the time. It is also expected that the majority of those vehicles that are unable to find a space will choose not to re-circulate and by pass the stop at the project site all together. The retail component of the site is expected to be primarily neighborhood serving, so the loss of patrons due to the re-circulation will be negligible.

Under existing conditions, with Third Street remaining a one-way street, the drive aisle within the residential garage will need to provide one-way clockwise circulation so as to prevent vehicular conflicts within the garage due to the right hand side inbound lane. Upon conversion of Third Street to a two way street, the drive aisle within the residential garage can provide two-way circulation.

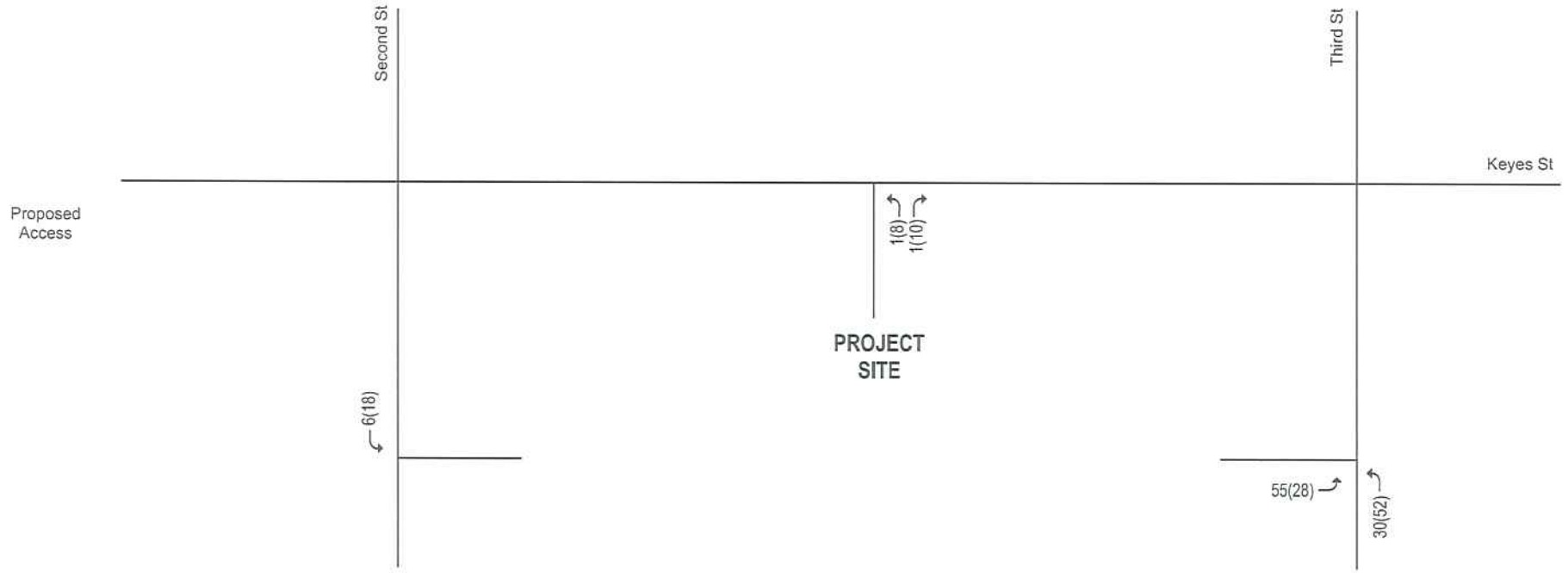
Project trips at each of the driveways with the various turn-restriction scenarios are presented in Figures 11 and 12. The fairly low project trips indicate that the turn restrictions will have little effect on traffic operations at each driveway. All driveways should be designed to meet City of San Jose standards.

Transit, Pedestrian and Bicycle Analysis

Although no deduction was applied to the estimated trip generation for the project, it can be assumed that some of the project trips could be made by transit. Assuming up to 3% transit mode share, which is probably the highest that could be expected, yields an estimate of approximately three (3) transit trips during the peak hours. Given that the site is served by several bus routes, these riders easily could be accommodated by the existing service.

Sidewalks are found along all streets that bound the project site. These sidewalks are adequate to serve the anticipated pedestrian demand.

The bikeways within the vicinity of the project site include bike lanes on Seventh Street, as well as segments of Keyes Street and Senter Road. These facilities would remain unchanged under project conditions. VTA recommends new developments to provide bicycle parking, and provides recommended bicycle parking rates in their *VTA Countywide Bicycle Plan* Technical Guidelines, September 1999. Two types of bicycle parking are described by VTA: Class I and Class II. Class I bicycle parking include bicycle lockers, rooms with key access for regular bicycle commuters, guarded parking areas, and valet or check-in parking. Class II bicycle parking refers to a bicycle rack to which the frame and at least one wheel of the bicycle can be secured with a user-provided lock and cable. According to VTA's recommended rates, a residential project (such as the proposed project) should provide one Class I bicycle parking space for every 3 proposed units and one Class II bicycle parking for every 15 proposed units. According to the recommended rates, the proposed project should provide 41 Class I and 8 Class II bicycle parking spaces.



LEGEND

= Site Location

= Study Intersection

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 11

PROJECT TRIPS AT SITE DRIVEWAYS (WITHOUT COUPLET CONVERSION)

Second and Keyes Mixed-Use Development

Hexagon Transportation Consultants, Inc.

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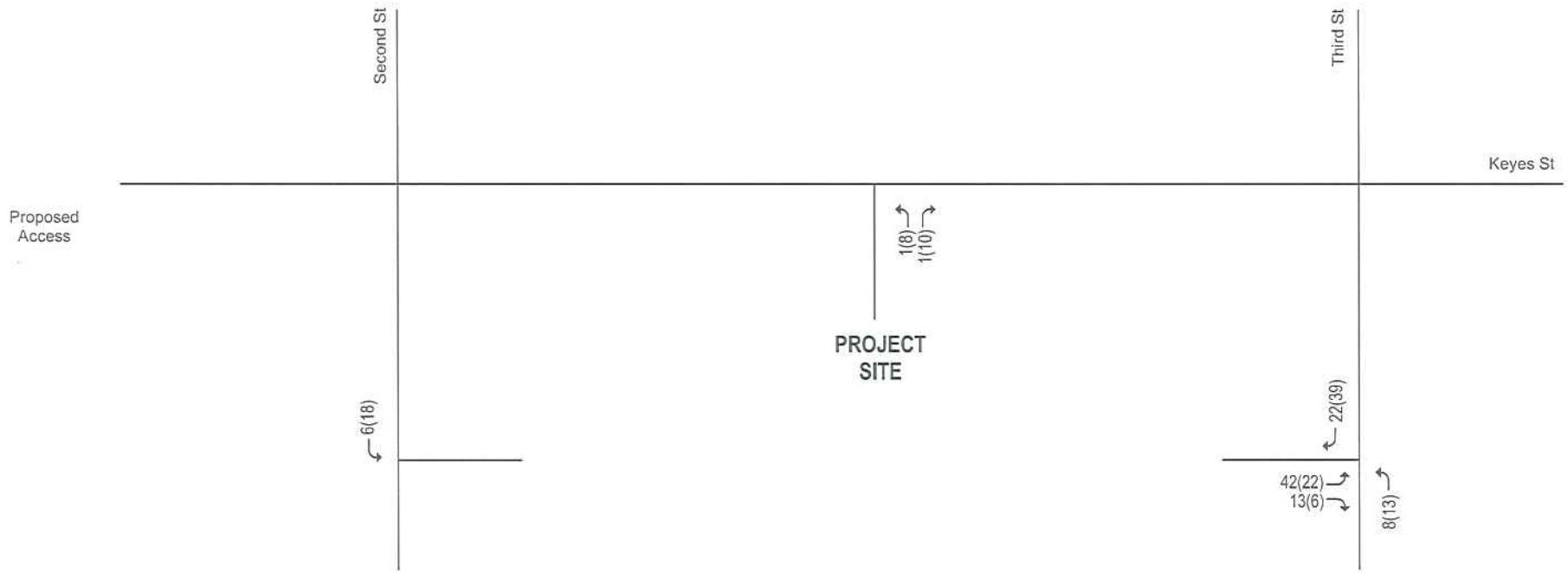

LEGEND

= Site Location

= Study Intersection

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 12

PROJECT TRIPS AT SITE DRIVEWAYS (WITH COUPLET CONVERSION)

Second and Keyes Mixed-Use Development

Hexagon Transportation Consultants, Inc.

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5.
Future Conditions

This chapter presents a summary of the traffic conditions that would occur under future growth conditions. The purpose of analyzing future conditions is to assess the traffic conditions that would occur at the time that the proposed development becomes occupied. For this analysis, the assumed occupancy date is June 2009. The analysis of future growth conditions is required by the CMP.

Roadway Network and Traffic Volumes

The intersection lane configurations under future growth conditions were assumed to be the same as described under background conditions. Traffic volumes under future growth conditions were estimated by applying to the existing volumes an annual growth rate of 1.2 percent, then adding the trips from approved developments and the project trips.

Intersection Levels of Service Under Future Growth Conditions

The level of service results for the study intersections under future growth conditions are summarized in Table 8. The results show that all of the CMP study intersections would operate at an acceptable LOS D or better during both peak hours under future growth conditions. The future growth traffic volumes and the intersection level of service calculations are included in Appendix C.

Table 8
Future Intersection Levels of Service

Study Number	Intersection	Peak Hour	Ave. Delay	LOS
1	First Street and Keyes Street*	AM	28	C
		PM	29	C
2	Second Street and Keyes Street	AM	32	C
		PM	37	D
3	Third Street and Keyes Street	AM	30	C
		PM	26	C
4	Seventh Street and Keyes Street	AM	33	C
		PM	38	D
5	First Street and Willow Street*	AM	4	A
		PM	8	A
6	First Street and Second Street	AM	16	B
		PM	30	C
7	First Street and Alma Avenue*	AM	50	D
		PM	43	D

* Denotes CMP intersection

6. Conclusions

The potential impacts of the proposed project were evaluated in accordance with the standards set forth by the City of San Jose's level of service policy. The study included the analysis of weekday AM and PM peak-hour traffic conditions at seven signalized intersections. The impacts of the project on intersections were identified on the basis of the City of San Jose level of service standards.

The traffic analysis also includes an evaluation of vehicle queuing at high-demand turn movements at study intersections. An analysis of freeway levels of service is not required because the project trips on freeway segments would be less than one percent of the capacity of the segments. Other transportation facilities, including pedestrian and bicycle facilities, and transit service, were examined to determine if any adverse effects are possible.

Project Impacts

The results of the intersection level of service analysis show that none of the study intersections would be impacted by the project according to the City of San Jose level of service standards.

The proposed project would not have any significant adverse impact on the existing pedestrian, bicycle or transit facilities in the project area.

Other Transportation Issues

Site Access and On-Site Circulation

Site Access

The project site plan proposes one access driveway from Second Street and one exit driveway along Keyes Street for the at-grade retail parking lot. The Third Street driveway will be restricted to residents only and provide both ingress and egress to the below grade residential parking.

The driveway along Keyes Street will provide exit only from the one-way drive aisle serving the retail parking lot. Signage should be placed at the driveway restricting inbound traffic.

The Second Street driveway is proposed to only provide access with no exit. The restriction of the outbound left-turn movement from the driveway will avoid any safety issues with southbound Second Street traffic. Vehicle queues from the existing intersection of Second Street and First Street occasionally back-up. The vehicle queue will inhibit vehicles from the project driveway and could create unsafe conditions due to the southbound Second Street to Humboldt Street traffic that is not controlled. All driveways should be designed to meet City of San Jose standards.

The residential driveway along Third Street will provide one inbound lane and one outbound lane. Under conditions with Third Street providing one-way northbound traffic flow only, the inbound driveway lane will be provided on the right side while the outbound lane is provided on the left side of the driveway. The orientation of inbound and outbound driveway lanes will need to be reversed upon conversion of Third Street to a two-way street.

Delivery loading zones will be provided along the project's frontage on Second Street. No large delivery trucks will access to the on-site parking areas. Garbage pick-up will occur at the Keyes Street driveway. The Fire Department has reviewed the site plan and indicated that they will not require access to the on-site parking areas.

On-Site Circulation

The on-site retail parking lot and spaces will be served by a one-way 26 foot drive aisle beginning at the Second Street entrance and terminating at the Keyes Street exit. All spaces will be oriented at 90-degree angles with respect to the drive aisle. Circulation through the parking lot will be continuos and will not be inhibited by any dead end aisles, but the one-way drive aisle will require that any vehicle that circulates through the parking lot and does not find a parking space to exit the parking lot. Vehicles exiting the retail lot and wanting to return to search for parking again will need to travel eastbound down Keyes Street and re-circulate to Second Street. Though the re-circulation of vehicles is not ideal, it is not expected that the retail parking lot will be completely full the majority of the time. It is also expected that the majority of those vehicles that are unable to find a space will choose not to re-circulate and by pass the stop at the project site all together. The retail component of the site is expected to be primarily neighborhood serving, so the loss of patrons due to the re-circulation will be negligible.

Under existing conditions, with Third Street remaining a one-way street, the drive aisle within the residential garage will need to provide one-way clockwise circulation so as to prevent vehicular conflicts within the garage due to the right hand side inbound lane. Upon conversion of Third Street to a two way street, the drive aisle within the residential garage can provide two-way circulation.

Intersection Operations Analysis

The analysis indicates that the estimated maximum vehicle queues at the high-demand turning-movements at intersections on Keyes Street near the site currently and will continue to exceed the vehicle storage capacity under background and project conditions. Project generated traffic at other locations would be too low to have a measurable effect on queue lengths. There are no feasible improvements that can be implemented at the identified locations due to restrictions in right-of-way.

MEMORANDUM

TO: Jeff Oberdorfer & Michael Santero, First Community Housing

FROM: Robert Del Rio

DATE: March 10, 2008

SUBJECT: Results of Parking Demand Surveys for FCH Affordable Housing Developments in San Jose, with Existing ECO-pass Programs for Tenants

Hexagon Transportation Consultants has completed this study to determine the parking demand for First Community Housing (FCH) affordable housing developments in San Jose, California. FCH has had a free, annual, ECO-pass program in place for over seven years and is the largest residential purchaser of Eco-passes, which provide for free bus and light rail within Santa Clara County. Our findings are summarized below.

Parking Surveys

Ten affordable housing developments in San Jose were surveyed for parking demand. The developments surveyed varied in size and type (studio, 1 to 4 bedroom units, and senior housing). Each affordable housing development was surveyed on a weekday evening (Thursday night February 26, 2008) and a weekend evening (Saturday night March 1, 2008) between the hours of 12:00 AM and 2:00 AM, which represents the peak hours of demand for resident parking. Unlike retail parking demand, residential parking demand does not experience significant seasonal fluctuations. The Urban Land Institute (ULI) publication *Shared Parking, Second Edition*, shows no changes in peak monthly parking demand for residential uses.

It should be noted that the surveyed parking areas were gated and generally consisted of resident and property management parking only. Field observations revealed that the surveyed sites generated little or no on street parking demand. This is further evidenced by the fact that in most cases, the onsite parking supply at each site exceeded the demand during the time the surveys were conducted. The list of housing developments surveyed and the results of the surveys are shown in Table 1 below.

Studio Apartments

Three of the sites surveyed provide studio apartments only ranging in size from 25 to 179 units. Each site had less than four vacant units at the time of the surveys. The maximum parking demand of 57 vehicles was observed at the Curtner Studios site. The maximum and average calculated parking ratios for studio apartments are 0.43 and 0.38 spaces per unit, respectively.

One to Two Bedroom Apartments

Two of the sites surveyed consisted of apartment units providing one to two bedrooms and provided 21 and 30 units. Neither site had vacant units at the time of the surveys. The maximum parking demand of 45 vehicles was observed at the Paula Apartment site. The maximum and average calculated parking ratios for one to two bedroom apartments are 2.14 and 1.80 spaces per unit, respectively.

One to Four Bedroom Apartments

Four of the sites surveyed consisted of apartment units providing one to four bedrooms ranging in size from 23 to 246 units. Each site had less than three vacant units at the time of the surveys. The maximum parking demand of 420 vehicles was observed at the Rincon de los Esteros site. The maximum and average calculated parking ratios for one to four bedroom apartments are 1.71 and 1.50 spaces per unit, respectively.

Senior Housing

One 90 unit senior housing site that provides one-bedroom units also was surveyed. The site had no vacant units at the time of the surveys. A maximum parking demand of 52 vehicles was observed at the site. The maximum calculated parking ratio for senior housing units is 0.58 spaces per unit.

Published Data

The City of San Jose required parking rates for residential developments are based on the number of bedrooms in each residential unit and are as follows:

SRO (near transit)	1.0
Studio	1.5
1 Bedroom	1.5
2 Bedroom	1.8
3 Bedroom	2.0
Each Additional	0.15

The Institute of Transportation Engineers (ITE) publication, *Parking Generation, 3rd Edition*, contains no data on parking demand solely for affordable housing type developments, or for developments that provide tenants with free, annual transit passes, but does provide parking demand for typical apartment units (low/mid rise apartments). Half of the ITE surveyed sites were affordable units. The ITE identifies a peak parking demand rate of 1.17 parking spaces per apartment unit.

Recommended Parking Ratio

The surveys indicate an overall average of 1.13 spaces per unit for the affordable housing sites surveyed. In the publication *Parking* by Weant and Levinson, it is suggested that an appropriate design ratio for parking is the 85th percentile peak demand plus a 10% safety factor. Applying the 10% safety factor to the average calculated survey rates for potential guest parking, the suggested parking ratio for affordable housing development, with Eco-Pass Program in San Jose is approximately 1.24 spaces per unit.

Studio Apartment	0.42 spaces per unit
One to Two Bedroom Apartment	1.99 spaces per unit
One to Four Bedroom Apartment	1.65 spaces per unit
Senior Apartment	0.64 spaces per unit

The City of San Jose parking ratios are greater than the peak surveyed parking ratios at nine of the ten sites surveyed even after adjusting for vacancies and accounting for guest parking. The surveyed parking ratios also are comparative to parking demand estimated using the average rate published in ITE *Parking Generation, 3rd Edition*.

Table 1
Parking Survey Results

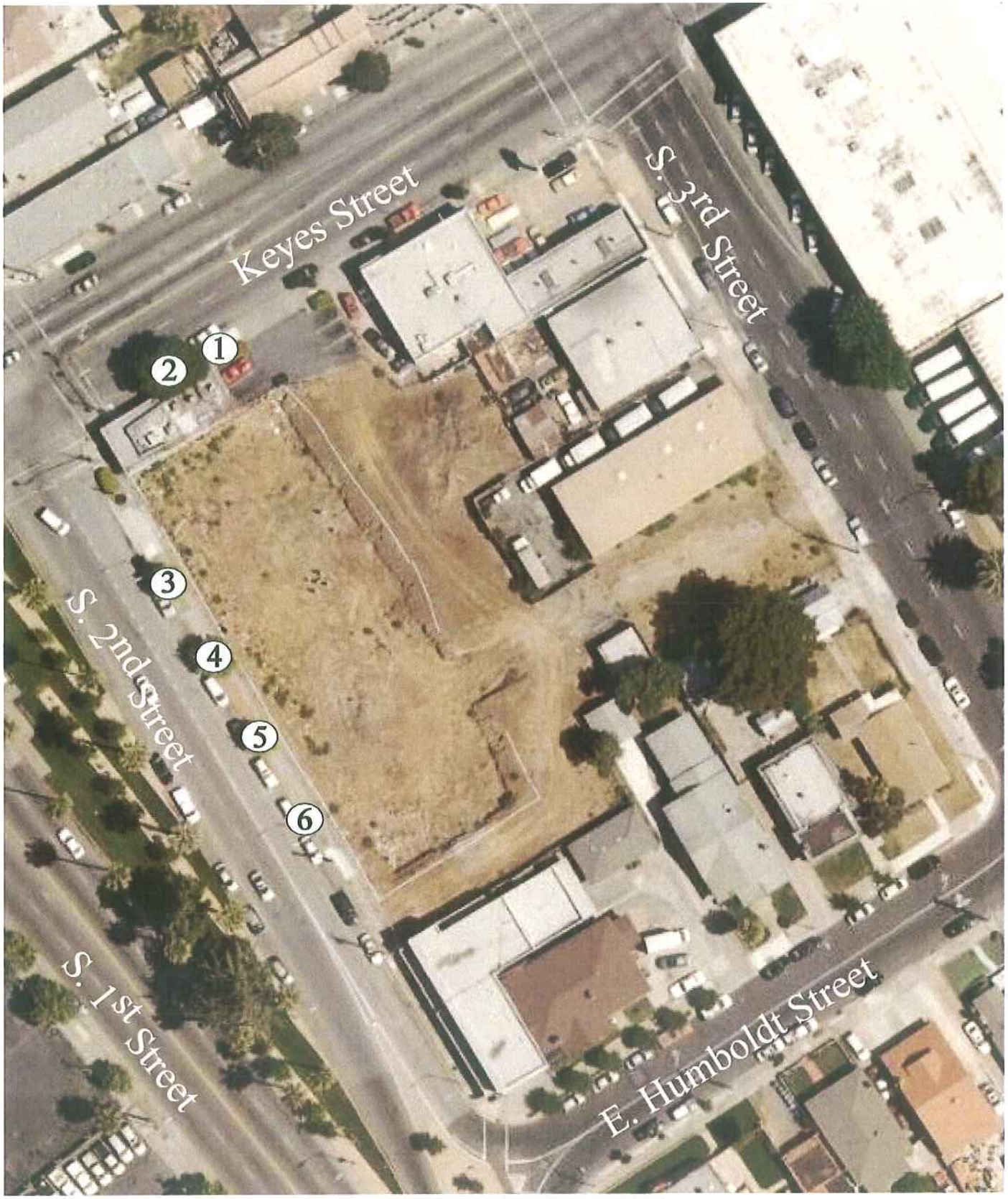
Location	Name	Size (d.u.)[1]	Occupied Units (d.u.)[1]	Parking Supply				Max Parking Demand						Max Ratio Demand/# units[2]
				On-Site				Weekday			Weekend			
				Standard	Handicap	Total	On-Street	On-Site	Street	Total	On-Site	Street	Total	
Studio Apartments														
965 Lundy Avenue	Creekview Inn	25	21	12	1	13	0	8	0	8	9	0	9	0.43
701 Curtner Avenue	Curtner Studios	179	179	83	4	87	8	49	8	57	40	7	47	0.32
4980 Hamilton Avenue	El Paseo Studios	98	96	46	2	48	2	35	2	37	33	2	35	0.39
											Average Peak Studio Ratio			*0.38*
											Plus 10% Safety Factor			*0.42*
1-2 Bedroom Apartments														
801 Paula Street	Paula Apartments	21	21	35	2	37	20	32	13	45	28	16	44	2.14
714 South Almaden Avenue	Troy Apartments	30	30	37	3	40	18	28	16	44	28	14	42	1.47
											Average Peak 1-2 Bedroom Ratio			*1.80*
											Plus 10% Safety Factor			*1.99*
1-4 Bedroom Apartments														
945 Lundy Avenue	Betty Ann Gardens	76	73	125	5	130	12	104	12	116	97	11	108	1.59
35 East Gish Road	Gish Apartments	35	34	50	2	52	0	35	0	35	37	0	37	1.09
76 Duane Street	Guadalupe Apartments	23	22	36	2	38	6	29	6	35	26	5	31	1.59
1780 Oakland Road	Ricon de los Esteros	246	245	417	10	427	55	365	55	420	362	53	415	1.71
											Average Peak 1-4 Bedroom Ratio			*1.50*
											Plus 10% Safety Factor			*1.65*
Senior Housing														
2580 Bascon Avenue	Craig Gardens Senior	90	90	60	3	63	12	44	8	52	46	6	52	0.58
												Plus 10% Safety Factor		*0.64*
												Overall Average Peak Ratio		**1.13**
												Plus 10% Safety Factor		**1.24**

[1] Number of occupied dwelling units (d.u.) supplied by First Community Housing

[2] Maximum demand (weekend or weekday) divided by number of occupied units.

APPENDIX E

TREE MAP


Keyes Street
S. 3rd Street
S. 2nd Street
S. 1st Street
E. Humboldt Street
1
2
3
4
5
6

N

Tree Map